1986

Design, development, and testing of software for automation of a Naval tactical aviation squadron.

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NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

DESIGN, DEVELOPMENT, AND TESTING OF SOFTWARE FOR AUTOMATION OF A NAVAL TACTICAL AVIATION SQUADRON

by

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September 1986

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Approved for public release: distribution unlimited

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a SECURITY CLASSIFICATION AUTHORITY	3 DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release: distribution unlimited
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE	
4 PERFORMING ORGANIZATION REPORT NUMBER(S)	5 MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION Naval Postgraduate School (6b OFFICE SYMBOL (If applicable) 31)	7a. NAME OF MONITORING ORGANIZATION Naval Postgraduate school
6c. ADDRESS (City, State, and ZIP Code) Monterey, California 93943-5000	7b. ADDRESS (City, State, and ZIP Code) Monterey, California 93943-5000
8a. NAME OF FUNDING / SPONSORING ORGANIZATION (8b. OFFICE SYMBOL (If applicable))	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (City, State, and ZIP Code)	10 SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO / PROJECT NO / TASK NO / WORK UNIT ACCESSION NO

11 TITLE (Include Security Classification)
DESIGN,DEVELOPMENT, AND TESTING OF SOFTWARE FOR AUTOMATION OF A NAVAL TACTICAL AVIATION SQUADRON. (UNCLAS)

12 PERSONAL AUTHOR(S)
Gattuso, Joseph A.

13a TYPE OF REPORT	13b TIME COVERED	14 DATE OF REPORT (Year, Month, Day)	15 PAGE COUNT
Master's thesis	FROM _____ TO _____	1986 September	344

16 SUPPLEMENTARY NOTATION

17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Automation, Information Management Systems, Tactical Squadrons, Relational Database, Expert Systems, Navy TACAIR combat readiness

19 ABSTRACT (Continue on reverse if necessary and identify by block number)

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20 DISTRIBUTION / AVAILABILITY OF ABSTRACT	21 ABSTRACT SECURITY CLASSIFICATION
☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	unclassified
22a NAME OF RESPONSIBLE INDIVIDUAL Professor R. Kolar	22b TELEPHONE (Include Area Code) (408) 646-2936 / 22c OFFICE SYMBOL 31

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The SIMS will help slay the paper dragon in the TACAIR community, letting the pilots concentrate on their most demanding responsibility . . . becoming a professional warrior.

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Design, Development, and Testing of Software for Automation of a Naval Tactical Aviation Squadron

by

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN AERONAUTICAL ENGINEERING

from the

NAVAL POSTGRADUATE SCHOOL
September 1986

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This thesis is an attempt to automate the Operations department of an A-7 or F/A-18 squadron. Subsequent additions may extend to other departments. The Squadron Information Management System (SIMS) is flexible, supportable, and transportable.

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ABBREVIATIONS AND ACRONYMS

ALL TIMES ARE IN MILITARY FORMAT

A-7	Light Attack Bomber: "Corsair II"
ACM	Air Combat Maneuvering
ADMAT	Administrative and Materiel Inspection
AOM	All Officers Meeting
APM	All Pilots Meeting
BATT	Battalion
BUNO	Bureau Number
CO	Commanding Officer
COMLATWINGPAC	Commander, Light Attack Wing, Pacific Fleet
CPFH	Cost Per Flight Hour
CPS	Cost Per Sortie
CPT	Co-Pilot Time
CSSP	Combined Services Support School
CTPI	Conventional weapons Technical Proficiency Inspection
DET	Detachment or Deployment
DRIVER	Pilot
F/A-18	Strike Fighter: "Hornet"
FCLP	Field Carrier Landing Practice

FROGFOOT	NATO code name for a Soviet tactical aircraft
FPC	Flight Purpose Code
FPO	Fleet Post Office
FPT	First Pilot Time
GUNNER	Ordnance Division Officer
IFF	Identification Friend or Foe
LAWES	Light Attack Weapons Employment School
LSO	Landing Signal Officer
MK76	Mark 76 practice bomb
MODEX	Reference number for squadron aircraft usage
NALCOMIS	Naval Aviation Logistics Command Information Management System
NATOPS	Naval Air Training and Operating Procedures Standardization
NCLT	Night Carrier Landing Trainer
NEW GUY	New pilot checking aboard the squadron
NSC	Nuclear Safety Council Meeting
NSO	Nuclear Safety Officer
NTPI	Nuclear weapons Technical Proficiency Inspection
OK	Grade assigned for a carrier landing approach
ORE	Operational Readiness Evaluation
OPS	Operations

OPTAR	Funds allocated to the squadron over a period of time, usually a fiscal quarter
PMA	Primary Mission Area
RAM	Random Access Memory
REFTRA	Refresher Training
ROCKET #	Seniority number relative to other squadron pilots
ROCKEYE	Air-dropped weapon
SDO	Squadron Duty Officer
SNIVEL	An appointment made by an officer that precludes scheduling him for a flight
SPC	Special Crew Time
STATE	In relation to fuel, the amount remaining
TAD	Temporary Assigned Duty
TEMADD	Temporary Additional Duty
TOO	Target of Opportunity
TRAP(S)	Carrier arrested landing(s)
WALLEYE	Air-dropped weapon
WEPS	Weapons
WHEELBOOK	A Government-issue appointment book
WTO	Weapons Training Officer
XC	Cross-Country
XO	Executive Officer
YELLOW SHEET	Naval Aircraft Flight Record [OPNAV 3760/2]
20MM	Twenty millimeter cannon shell
2F111	Type of instrument simulator

ACKNOWLEDGEMENTS

The author wishes to acknowledge God for His inspiration and endurance imparted to complete the work. The good parts are His, and the bad parts are mine.

The author also wishes to acknowledge Dr. R. Kolar for his assistance in the preparation of this thesis.

The Data Access Corporation Technical Assistance Bureau is acknowledged for the assistance provided during the programming phase of the project.

I. INTRODUCTION

This thesis proposes a solution to one of the largest single obstacles to combat readiness faced by today's tactical aviation squadrons. The obstacle is the squadron's information management system.

Pilots spend an inordinate amount of time in the execution of repetitive, time-consuming administrative tasks. Daily routine is primarily concerned with attempting to fulfill documentation and reporting requirements needed to properly maintain and administer the modern aviation squadron, to the exclusion of tactical concerns. While the performance of these administrative tasks is crucial to proper squadron functions, the method by which they are accomplished has not taken advantage of current technologies in the area of information systems management and automation. As a result, administrative routine is conducted as it has always been conducted . . . with a manual system to gather, process, store, and report all the required information. In prior years, for squadrons flying aircraft considered rudimentary by today's standards, this method was adequate. Pilots had the extra time needed to devote themselves to a manual information system. These manual gathering, filing, and

reporting procedures soon developed into the way tactical aviation fulfilled its information handling requirements. This method has developed enormous organizational inertia.

Today, jet aircraft have become so complex and capable that the modern pilot must spend much of his working time mastering his complicated machine. Additionally, today's air defenses have increased in sophistication and amount. The modern combat pilot must be at least operationally familiar with many more air defense systems than did his predecessor. Today's armory of sophisticated weapons requires of the pilot time spent in study and familiarization of capabilities and tactical employment. This familiarity requires time; time spent in study, discussion, reading, and training against and about the current threats.

New aircraft, new threats, and new weapons. All of these add up to a quantam leap in the amount of time a pilot must spend in the pursuit of becoming today's professional warrior. This goal demands a radical shift in the priority of his time allocated within the squadron. Unfortunately, that shift in time priorities has not occurred, for the simple reason that the manual information system used by squadrons long ago is still in place. Today's pilot is struggling to perform his required administrative tasks with an antiquated system that

demands the largest portion of his working day, and in so doing neglects primary tactical concerns such as studying his aircraft, threats he may face, and new weapons he must deliver. This neglect is not intentional. The manual information system causes it, and the pilots have not been able to do a thing to alter the situation. Now they can.

The Navy has contracted with the Honeywell Corporation to provide an extensive network of logistic and maintenance automation under the NALCOMIS program. [Ref. 1] Part of the NALCOMIS system automates some portions of the administrative and operational functions of a squadron. The initial implementation of NALCOMIS in the fleet squadrons will not occur until approximately 1989 or 1990. This thesis proposes an interim solution to this gap. It is an inexpensive, effective, and attainable information management system for use within the operational squadrons using either small microcomputers obtained in contract with Zenith or microcomputers owned personally by members of the squadron.

This thesis is an information management system, structured around relational-database software custom-tailored for both the A-7 and F/A-18 communities. Properly employed, it will automate every administrative function within an Operations department now required by current directives. Dependent upon its acceptance, subsequent additions to the system will be added for the

Administrative, Maintenance, and Safety departments. It is functional, easy to use, and secure. It need not handle confidential information, but has built-in capability to do so. It was designed with the fluid environment of a fleet squadron as a primary consideration. It can be taken aboard ship or sent on a detachment apart from the main portion of the squadron, allowing that detachment to automate its own functions. The file structure will permit individual officers to maintain their own databases on the system at the squadron and at their own home computers.

The main objective has been to bring about that shift in the amount of time today's pilot spends in managing his information. In doing so, it will improve each individual pilot's morale, increase his job satisfaction, and most importantly, give him the additional time he needs to make himself into the best combat pilot he can be. As the system helps realign tactical considerations to positions of higher priority in squadrons, pilot retention may be expected to increase. Ultimately, it will help our pilots become professional warriors.

The "Squadron Information Management System" (SIMS), as it is will be referred to henceforth, is described within this thesis.

Chapter two provides an overview of the SIMS, along with speculation on future needs for automation in the Navy's squadrons. It discusses the desired system

requirements of an ideal future automated information system for a squadron, and delineates reasons why the particular developmental software used to create the SIMS was selected.

Chapter three describes in detail how the information flow of a squadron was studied and constructed for use in a relational database. It shows how different types of squadrons, such as an F-14 or A-6 squadron, may alter the files in the SIMS to tailor them for their own particular requirements. In doing so the chapter also lays out how the files are structured, how they relate, and future suggested software "attachments" to portions of the system.

Chapter four takes a closer look at a particular file within the SIMS to describe precisely how one takes required information and converts that need into a functioning database using the developmental software. It goes on to discuss in detail the methods available to extract the information from the constructed databases.

Chapter five discusses some theoretical applications that may be made of the SIMS in the future, incorporating facets of the artificial intelligence field.

Chapter six has conclusions and recommendations. It will summarize the accomplishments of the thesis, hope for future additions to the SIMS, and make recommendations for subsequent work in the same area. Further, recommendations

are made to the Wing command functionaries in order to reap maximum benefit from the SIMS.

An Appendix supplements the main body of the thesis. This is the instruction manual for the software.

II. SIMS OVERVIEW

The Squadron Information Management System (SIMS) is a relational database tailored to fit the requirements of A-7 and F/A-18 Operations departments within today's squadrons. It was created using application development software from DataAccess Corporation. The developmental software is called "DataFlex". It is similar to DBase III+, but more flexible in its applicability.

A. GENERAL SYSTEM CAPABILITIES

The SIMS will run on a host of microcomputers and operating systems, and also will run on many of the common computer networks [Ref. 2:p. F-11]. It is remarkably flexible. Recognizing that fleet squadrons have limited computer facilities at the present time, and austere funding in that area, the SIMS was designed to be used on either:

1. Zenith computers now in place for squadron use; the Z-150 or the Z-248, with a hard disk installed.
2. IBM compatible machines personally owned by members of the squadron.
3. CP/M machines personally owned by members of the squadron.

Due to the large volume of information within a fleet squadron, the SIMS was designed to be used on a hard disk

system, with a minimum of 20 Megabytes and a recommended 30 Megabytes of disk storage space. For future considerations, the SIMS will work on any major computer network and will be able to interface with the coming NALCOMIS data base and operating system [Ref. 1].

The design of the Operations portion of the SIMS was founded primarily on two main instructions. The first was Commander, Light Attack Wing Pacific Instruction (COMLATWINGPAC) 5040.1E dated 2 April 1985. [Ref. 3] This instruction references OPNAVINST 5040.7J, and sets down the guidelines for Command Inspections (administrative procedures and routines) within LATWINGPAC squadrons. The second was COMLATWINGPAC Instruction 3500.3E dated 24 JAN 1985 [Ref. 4] which covers in detail how all training and readiness information should be handled and reported within LATWINGPAC squadrons. Each requirement found in the above instructions pertaining to the Operations department applicable to information handling was incorporated within the SIMS.

The design of the SIMS also considered the fluid environment in which most fleet squadrons function. This was a critical design parameter. If the SIMS could not be taken aboard ship, its usefulness would be severely limited. The squadron will be able to use the SIMS as long

as it has access to a microcomputer. The file structure also permits the squadron to send portions of the SIMS away on detachments, while maintaining the main system with the main portion of the squadron.

Another major design consideration was system support and software maintenance for the system to require a minimum amount of maintenance to function. The SIMS can be maintained by one individual at the wing level. This individual can be an officer already in place on the staff, and he would require a small amount of developmental training on the system. The training would take about three days.

One of the major objectives of the system design is a user-friendly environment, but not at the expense of security. For example, there are no help screens incorporated in the on-line software. In order to use the system, an individual must have been authorized to use it, and have access to an instruction manual. This access can be controlled by the squadrons as another security measure. Once the authorized user spends approximately 30 minutes on the system, he will be quite familiar with its functions and be able to manipulate, enter, edit, and report on the data. He will only need the instruction manual for reference at that point. The SIMS is completely menu-driven. At this stage, the SIMS menu system shows all functioning departments in the squadron. For example, the

user will note a selection on the departmental menu that will take him to the "Administrative Department". The Administrative Department as yet is not incorporated in the SIMS. However, upon selection the user will see a message informing him with appropriate information. (Selection areas which have not yet been automated are denoted in the menu system by a small carrot '^' adjacent to the choice.) One could say 'the entire house has been built, but only some of the rooms are furnished'; the system is designed with open-ended software for easy expansion.

Security was an aspect that received significant consideration in the design phase. The SIMS is managed and maintained in the squadron by a "system manager". This individual will control access to the system and the keys to software locks incorporated. The user must enter his last name, his first name, and a preassigned number into the system. The system may be configured to display immediately upon turning on the computer, insulating the user from the computers' operating system. The system's security level was kept commensurate with the existing level of security surrounding the same type of documentation within the squadrons, adding some needed improvements for personal files and information.

The intent of the SIMS is not to alleviate the squadron yeoman's responsibilities or amount of time spent

at the typewriter. The objective is to release the flightcrews from extensive and repetitive administrative documentation and the associated reporting that goes with it. The SIMS outputs reports in an acceptable, editable format. The squadrons may then use their yeomen to format the information in the acceptable message form. The reports available to the user enable him to track the squadrons' operational performance in every major area of concern.

As with any database, information within the SIMS must be periodically "backed up". The frequency with which the system is backed up is a decision made by the individual squadrons. A suggested backup strategy is included within the instruction manual.

B. FUTURE NEEDS FOR SQUADRON AUTOMATION

The current version of the SIMS handles the Operations portion of today's A-7 or F/A-18 squadron. The Operations department was chosen because it was large enough that, upon completion, would benefit the squadrons in their daily function, yet small enough to be accomplished within the given time frame for this work. Depending upon the reception received by the Operations portion of the SIMS, additions to its file structure will incorporate automation of the Administrative and Safety departments.

The complete automation of the Maintenance department will be left to the coming NALCOMIS effort; this does not preclude individuals developing their own applications prior to the implementation of NALCOMIS. Provisions have been made for these options.

In discussing any future squadron automation, the NALCOMIS system must be considered, as the military is already under contract for the work. Ancillary automation efforts must be compatible with this system. It would be desirable for other automation efforts to enhance and expand on the basic areas covered by the NALCOMIS systems, while at the same time retaining the ability to interface with the NALCOMIS database. The SIMS has this capability. While the Operations module of NALCOMIS covers some of the same areas as the SIMS, the SIMS deals with individual squadron's operational documentation and reporting needs more comprehensively. The SIMS is not intended to substitute or replace the NALCOMIS Operations module, but to complement it. The SIMS is available now, for use until that module is operational in the fleet; when it does become operational the SIMS may still be used for areas not covered by the NALCOMIS operations module. The SIMS may be used on the NALCOMIS hardware.

As squadrons begin to automate their functions, it opens the door for the use of 'expert systems' in selected areas of management and decision-making. Further

exploration of this subject is covered in chapter six, but any system that automates squadron procedures should have the ability to interface with or be controlled by 'shell' programs that have an artificial intelligence capability.

The possibility that there may be more than one microcomputer available for squadron use must be taken into account by any information system or database proposed as an interim solution before NALCOMIS. This then requires the software to support networking and the local area networks (LANs) on which they may be utilized. A system should provide the squadrons with the option of adding more than one computer to the original file server, thus creating a network. The software should support both single-users and multi-users with a minimum of reconfiguration. It must have good performance under networking conditions and minimal system maintenance.

The designer attempting to automate the squadrons' functions must realize at this time that there is very little data processing capability within the squadrons. The squadrons currently possess a varied selection of computers, ranging from the non-IBM compatible Z-100 to the present contracted Z-248, possessing IBM compatibility with IBM/AT performance. On the average, approximately one or two individual squadron officers own a personal computer, and this number is growing. At this time, the

squadrons themselves do not have any authority to procure data processing equipment. Therefore, any automated information system that is contemplated must be tailored to microcomputer capabilities. If the designer wishes to open the possibility of officers using their own personal computers, he must have his database support most commmon operating systems. As the designer permits the system to cover a wide range of operating systems, it makes his effort available to squadrons and officers who would otherwise not have the option to utilize his software because of funding or hardware constraints.

In addition to the lack of computer hardware within squadrons, there is a greater lack of understanding and appreciation of computer abilities, semantics, and data processing advantages. The system designer must overcome this unfamiliarity by constructing a system that is very easy to use, very safe to use (regarding the database), and very secure.

C. WHY DATAFLEX WAS SELECTED

At the beginning of this project, several alternative approaches to automating the squadrons' functions were considered. After determining the status of fiscal constraints, procurement restrictions, operational concerns, and the total information flow within a squadron Operations department, it was decided to develop a

database tailored specifically for the A-7 and F/A-18 communities to function on any microcomputer that would possibly be available to the squadron officers. Through the course of the project, several requirements for a comprehensive information system that would accomodate a wide range of present and future constraints became evident. These needs are listed in the previous section. If coding for a customized squadron application was going to be written from scratch, it called for application development software. The hunt began for capable, fairly easy to master, flexible database development software. It needed to satisfy as many of the above constraints as possible. It needed to be affordable, as the author would cover expenses. DATAFLEX was selected after due consideration. Other application development packages met some criteria, but none had the flexibility and options DATAFLEX offered. At this juncture, it should be mentioned why DBase II or III was not selected. DBase II did not offer as much in terms of database development, file structuring, portability, supportability, user-friendly operation, and power in relational applications. Additionally, DBase II falls short in other areas discussed in the previous section. DBase III is a significant improvement over DBase II, yet several factors combined to preclude its selection also. It does not have the ability to be used in a local-area network. The

developmental costs were significantly higher. Further, interface with the user was observed to be more intimidating with DBase III. Therefore, after careful evaluation, DATAFLEX was seen to suit the particular needs of squadrons in automating their information system.

III. INFORMATION FLOW: HOW THE FILES ARE STRUCTURED

The Squadron Information Management System (SIMS) is a relational database. Separate files are customized to meet the current needs in the A-7 and F/A-18 communities. With some minor changes, requiring a developmental license and approximately 6 to 8 hours, the SIMS may be configured to serve most different squadrons. In this chapter, the file structure of the SIMS is described. This file structure was designed to model the information structure within standard A-7 and F/A-18 squadrons. Additionally, particular files requiring alteration when changing the type of squadron serviced by the SIMS are delineated.

It may be noted that although files for the Operations department alone exist at this time, the menu structure for the entire squadron was established, enabling addition of other departmental files.

A. FILE STRUCTURE

At the beginning of the design process for the SIMS project, the Operations departments of two fleet squadrons were queried extensively about their function and information flow. Their organizational structure was noted and adhered to in the design of the system. The system design was approached with a "top down" philosophy,

following the organizational outline in the typical single-seat tactical fleet squadron.

It may be pointed out that the terms 'segments' or 'divisions' merely describe how the files are divided, and do not imply modeling of actual organizational function.

The squadron was first divided into two encompassing segments: a "command" segment and a "departments" segment. The command segment will hold the files for the Commanding Officer, the Executive Officer, and the Command Master Chief. The departments segment will hold all files for the four squadron departments- Operations, Administration, Maintenance, and Safety. Each of the four departments were further subdivided according to general departmental functions and functions performed by the officers within those departments. As an illustration, details for the Operations department are presented.

Within the file structure of the Operations department, there are five divisions. The first is termed "Ops system files", the second, "Level one", the third, "Level two", the fourth "Level three", and the fifth, "Flight". (there is a sixth choice, "Emergency", which enables the user to have instant access to the NATOPS manual emergency procedures section)

The Ops system files division holds the files required to adequately protect and administer the SIMS. This includes a system management file, a daily file with a software lock for the flight schedule, and a system file that permits the system manager to lock the entire SIMS. In the event of unauthorized entry, this file is automatically activated, locking the SIMS, requiring the system managers' efforts to unlock it.

Level one holds the "master level" files. These include the Flightcrew master files, the Yellow sheets for flight recording, and a small file for quarterly date information input used by the OPTAR structure. These 'lower' files are continually accessed and updated automatically by 'higher' files during the course of daily routine. For example, flightcrew master files hold the expiration dates for every training category. When a training report is run, it checks each flightcrew master file and reports on the status of each training area. Conversely, when a completed flight schedule entry is made, the particular flightcrew master file is automatically updated to reflect the accomplished training.

Level two files hold those files that are primarily concerned with information that applies to all officers within the department. They include a departmental mailbox, a snivel log, an Officers' board, and the SDO

list. The departmental mailbox is a file that allows a user, such as a yeoman or the ASDO, to address a particular message for any officer within the department. When a network is implemented, this file serves the entire squadron as the electronic mailbox. The snivel log works in the same fashion. The Officers' board may be used by the squadrons as best serves their purposes. It can be simply a bulletin board for items of interest, or the source for scheduling items of a particular nature, such as appointments to see the Commanding Officer. The SDO list file was designed for the senior watch officer to input the watch bill on a monthly basis. It also allows each officer to note when he has the watch, and a printout of the monthly schedule is always available.

Level three is the lowest level of file structure, yet perhaps the most important in effectiveness, and certainly the area in which expansion of the SIMS is most anticipated. This level holds all files that each particular officer in the department uses to perform his specific job. A complete description of each file may be found in Appendix, but a list of files is given here that is available to each officer to help perform his tasks.

The Operations officer has the following files:

- a personal wheelbook
- OPTAR inputs
- CPFH/CPS inputs
- OPTAR reduction recommendations
- a series of files designed to develop the training plan which includes:
- Ops calendar and training commentary
- Ops training calendar
- Aircraft receipts and transfers
- Flightcrew gains and losses
- Facilities and range requirements
- Officer ground training/school requirements
- Maintenance training
- Manning deficiencies
- Projections and readiness levels

The projections and readiness levels include files for the Operations officer to track OPTAR projections, ordnance projections, TEMADD projections, and document his planned and projected readiness levels for the coming training period.

The Training officer has the following files:

- a personal wheelbook
- a holding file identifying all training deficiencies for each flightcrew
- Training jackets

- the Weekly Training Plan
- Ground Training accomplished
- a supplemental file for subsequent programs performing TACMANUAL functions

The Weapons Training officer has the following files:

- a personal wheelbook
- a holding file for all ordnance delivered
- the Weapons Training Plan
- Tactical Publications
- Tactical Operations

The Schedules officer has the following files:

- a personal wheelbook
- the Flight Schedule
- Simulator scheduling

The Nuclear Safety Officer has the following files:

- a personal wheelbook
- NSO training and billets held
- Nuclear Safety Council minutes
- NSO PRP assignments/evaluations

The Landing Signal Officer has the following files:

- a personal wheelbook
- pilot landing grade files
- FCLP/Bounce priority list

- Trend analysis sheets
- a supplement for subsequent programs

At this point, the question of availability of the computing system arises. With only one terminal available within squadrons, how can all the officers in the operations department perform their daily tasks on the computer? A solution may be that while these files are stored in a database on the hard disk of a single computer, permitting the officers to work on the squadrons' computer, they also may be taken home or to the stateroom and used on the officers' personal computer. Once updated at any other location, the information may be copied back into the main database on the squadrons' computer at any time. When the NALCOMIS system is implemented, there will be many more terminals available.

The fifth level of files, the Flight section, contains sections for briefing and debriefing checklists, flight planning information, and some intelligence data files. Work on the Flight section has not yet commenced. For the A-7 version, however, there is a complete program within this section enabling the user to obtain performance data for high-altitude cruise, low-level navigation, and associated jet logs. Essentially a mission planner, it widely enhances the A-7 pilot's flexibility and accuracy

in mission planning. This topic is not addressed in the present project and may form an independent study leading to a thesis [Ref. 5].

B. AIRCRAFT-DEPENDENT FILES IN THE SIMS

This section addresses some issues for a developer and assumes familiarity with the DataFlex language.

There are very few files that need be changed when the SIMS is required in another type of aircraft squadron. The appendix gives a complete list of files that comprise the total SIMS. The relevant files that change and the portions within those files are discussed below. The files discussed, and the procedures to alter them, are not needed by the standard squadron user. Such users will have their own aircraft version resident on the computer and need no changes. This discussion is included to illustrate one of many flexible assets possessed by the SIMS.

Beginning from the top down, the first file that requires alteration is the GRD1 file, (A7GRD1 in the A-7 version) the flightcrew master file. Within these files, the training categories applicable to the particular aircraft and its mission are found. These categories must be re-written for different aircraft. Corresponding code must be altered within certain reports to access the newly made categories. Further, every report that addresses the

file GRD1 in its call to open files must alter specific variables in its code to reflect any new filename.

The second file requiring alteration is the Flight Schedule file, SCHED6 in the F/A-18 version or A7SCHED in the A-7 version. This file has all the training categories listed as variables. As the flightcrew completes a flight, they must indicate the type of training accomplished. This is done near the end of the flight schedule configuration. Should the aircraft change, these training categories change, and hence must be re-written, along with any reports that refer to these categories. The coding for the reports referred to in the above paragraphs may be found on the disk that comes with the SIMS package.

In summary, there are only two configuration files that must be re-written, and approximately 30 variables scattered through four or five reports that must be changed, in addition to the one complete re-write of the PMA report. The F/A-18 version was written first in this project. The conversion to the A-7 version took approximately 7 hours.

The developer also needs to enter the menu portion of his system (MENUDEF) and alter those choices if he has re-named any files.

In altering the SIMS to meet the needs of various communities, certain documents are a necessity. Each aircraft community has a particular set of administrative

instructions that prescribe what type and how information is documented within each department. These administrative functions are described in the respective "Administrative Inspection Requirements" instruction, variously titled among the communities.

Additionally, each department will handle their information flow according to the standard procedures established by its controlling functional command. For Operations departments, these procedures are found in the respective training and/or readiness manuals originating from the functional commands.

IV. SPECIFIC IMPLEMENTATION: HOW REQUIRED INFORMATION BECOMES A DATABASE

This section describes the required information flow in the Operations department leading to a database utilizing the DataFlex software, using the flightcrew master files as an example. It will also show how the information stored in the created database is retrieved with the use of a report configuration, and finally explain the Query utility, self-contained in the DataFlex runtime software.

A. FROM INFORMATION REQUIRED TO A DATABASE

1. Description of Information Requirements

Several topics of interest concern the automation of a flightcrew master file. The file must be comprehensive, and show the information typically sought by officers in the daily management of the squadron flightcrew. It must also be current. Ideally, as a functioning portion of a relational database, it should be automatically updated as each flightcrew's data changes. For example, one field in the file stores the total number of carrier arrestments ("traps") for the flightcrew. When a trap is entered in the yellow sheet file, it should also update that specific field in the master file. Also from the yellow sheet, entries should update the total time,

the night time, day traps, night traps, and total traps. Additionally, when a flightcrew completes a flight, the training accomplished is documented within the flight schedule file. This entry automatically updates the training information within the flightcrew master file. This interrelationship of information is the strength of a relational database system. One may see that several 'slave' files, such as the yellow sheet file and the flight schedule file, automatically update the 'master' files.

2. Conversion of Requirements to a Functioning Database

DataFlex permits any word processor that writes ASCII files to accomplish this step. This is a valuable and flexible tool. The developer must construct his input "screen" the way the finished file should appear, using any appropriate word processing program. Once this format is constructed, the developer will transfer the ASCII file to the DataFlex system where it will automatically convert the screen to a functioning interactive data base. It does so in the following fashion. First, it asks the developer to name the fields within the screen, called 'windows'. Second, it asks the developer to index this database by specific named fields. Proper indexing is critical to a useful and efficient database. Third, it compiles the code (written in Pascal, compiled with DataFlex's Pascal

compiler) at the developers' request. The configuration file, now a functioning database, is operational. The user types the name of the file or selects the file from a set of choices in a tailored menu system, and is automatically provided with a database of the desired information, plus the keyboard utility to move around within the database screen, save or delete pertinent records, clear the "windows" (those fields that hold data), or to escape from the configuration and return to a menu or the system.

B. RETRIEVING INFORMATION FROM THE DATABASE: REPORTING

The SIMS provides the squadron with instant access to its database on the screen. The user may page through records at liesure. However, the major utility of a database is the ability to retrieve specific information within that database. The DataFlex software provides the Query utility to perform this function, and a brief description follows in the next section. However, in a customized application such as the SIMS, there will always be information required that is of constant type and format. For example, every squadron has a report that delineates the monthly flight figures for the flightcrews. The information requirements unique to this particular report are known. The developer can design a report that automatically extracts the required information from the database without the use of the Query utility. This

greatly eases the user interface with the overall database. The developer can provide these report configurations for all the known information extraction requirements within the squadron. This requires of the user very little data manipulation or extraction, presenting to the squadron a much easier system to use.

In constructing a report configuration, the developer first must examine the reporting requirements possessed by the squadrons. This example will cover the Primary Mission Area (PMA) reporting requirements. It will show how the developer utilizes the information stored within the flightcrew master file and presents it to the requesting user in a form that is most useful for the accomplishment of the assigned tasks.

The PMA reporting and tracking requirements take up a large portion of the training officer's time. He must track each individual flightcrews' training accomplishment in numerous training categories. In the F/A-18 squadrons, there are approximately 52 of them, whereas there are approximately 38 in the A-7 squadrons. By multiplying the number of categories with the number of flightcrew, one obtains the amount of data the training officer must compile to track this one subject. In addition to whether or not the training was accomplished, he must also track the expiration dates of these training qualifications, which are dependent on the type of training. He must plan

to schedule the flightcrews to fly training missions if the expiration date in a specific category is approaching. A relational database system can do all this for the training officer. The report configuration performs these tasks in the following fashion.

First, it presents the training officer, or any authorized user, the choice of two reports. The user may simply run the "Liberty Elite" report. This report goes into each flightcrew's master file and compares the expiration dates next to each training category with the user-defined date, which is usually the date the user is running the report. This will reveal if the flightcrew member is expired in that particular category. If not, there are points ascribed to the flightcrew as readiness points. If that category has expired, no points are ascribed. The report goes through each flightcrew master file until it compiles each point total. It then manipulates the totals in the required fashion to arrive at the output information concerning PMA readiness levels. Once this information is totalled, the report coding automatically updates the readiness totals in each category of the respective flightcrews' master file, and updates the squadrons' "Daily" file, which holds the current C-rating. This information is available at a glance to any authorized user.

The second choice the user has answers the frequently asked question, "Who will expire in a particular category by a particular date?". The user chooses to run the PMAEXP1 report. This report first asks the user to set a date after which the system will show which flightcrew will expire in specific categories. For example, the report begins by asking the user for a date. It may be a date three days hence, or thirty days in the future. The system then takes that date and compares it with the expiration dates next to each training category in the flightcrew master files. If that category's date is less than the input date, the system writes the name of the flightcrew and the category to a transfer file. A subsequent report, PMAEXP2, is automatically executed, essentially reporting on this newly created transfer file. The report outputs, for each training category, which flightcrew will expire prior to the input date.

The remaining reports function in the same fashion as the example described above. They access selected databases, have inherent selection criteria based on the squadrons' informational needs within their configuration code, and output the data in an acceptable format.

C. THE QUERY UTILITY

The query utility was provided with the DataFlex software to permit the user to extract information from

the created database in any fashion. It is excessively simple to use, and specific instructions for its operation are provided within the instruction manual to the system in the appendix. This section will describe, in general, its use and capabilities.

The Query utility is called from the main menu system. Upon entry, it shows the user the databases which he may question. The arrow keys are employed to highlight the appropriate database, and the ENTER key is pressed to select. The utility then asks the user if he wants all records to be output, or if he wants records output by some selection criteria. Should the user desire some particular selection criteria, the utility displays the appropriate choices of field names and indices which will make up the report. Once the selection criteria are established, the program goes right to a display that requests the user how he wants the selected information output within the body of the report itself. (If no selection criteria were desired originally, the program goes to this choice by default) It subsequently presents the user with the choice of index, and then reporting by that index, lets the user select which field variables will be output. This gives the user complete control over the report's final output. After the choices have been completed and the report titled appropriately, the user may specify as to where the report should be sent. Choices

include the screen, a printout, or another data file. Also within this field of options are the ability to generate a program that will automatically re-run the exact information sort just completed. This option is especially useful if the user finds himself continually querying the same database for the same type of information. He would simply generate a program to do the query, and eliminate the numerous steps involved. (A developmental license is required for this step) Further, the user may restart Query from this point or exit back to the menu system. The report is then output according to the user's selections at the desired location.

Query presents the user with a very efficient method by which to examine and output selected portions of the database. The report output has no excessive formatting, other than that inherent within the utility. The other report configurations generated and specifically tailored by the developer contained within the SIMS have formats that are acceptable enough to be placed on the Commanding Officer's desk for his perusal. They are more formal, and contain a squadron header, the day's date, and a descriptive title for the report. This eliminates any titling questions and standardizes the presented reports in a single format. The user knows immediately the details of what he is looking at, and will be able to understand the same material if he views it in six months. They are

specifically tailored to meet the needs of the squadrons, whereas Query can be used to extract information of a spurious or non-standard form. One expected use for Query is to answer questions from Wing commands such as "...how many flight hours did a particular officer have between such and such dates, and what were his mission types on those flight hours?" These spurious requests can be fielded with ease utilizing the Query utility.

V. THEORETICAL APPLICATIONS FOR IMPROVED SQUADRON INFORMATION MANAGEMENT

This chapter will discuss possible applications of the SIMS in conjunction with artificial intelligence and expert systems technologies. It will propose some suggestions that are now possible, and some that await further technological developments. The next chapter suggests future areas for further research and effort.

The advantages of expert systems are rapidly coming forward as technology advances. Advantages that are germane to the Navy squadron are very attractive. For example, the various non-flying collateral duties within a squadron must be learned from the beginning by each new officer. This learning process is critical, and helps to build the officer's overall understanding of how a squadron functions, preparing him for command. However, at times the job performance may suffer while the officer 'learns the ropes'. Further, a conscientious officer may take inordinate amounts of time to perform the new task acceptably, neglecting the flight and tactical aspects. With an expert system in place, job performance remains at a high level at all times, and the officer learns the position from a knowledge base with great degree of

accumulated experience, improving his perceptions and comprehension of squadron functions.

A. SQUADRON FLIGHT SCHEDULING

1. Background

Making the daily flight schedule is a fluid process. It must incorporate inputs from training requirements, flightcrew availability, aircraft availability, and target or training area availability. Aboard ship this environment changes on a minute-by-minute basis.

The flight schedule comes about through a lengthy but well-defined process. (well-defined in some squadrons, less so in others) This process usually starts in the early part of the day, when the flight schedule for the following day is begun. The schedules officer must solicit inputs from the maintenance department concerning the status of the next day's aircraft, from the ordnance department about its capabilities in handling proposed ordnance training missions; from the training officer about pilot's needs for training, and the snivel log concerning flightcrew availability. As the flight schedule is flown, the "completed flight schedule" is wrought, comprised of the flights accomplished, with their times and various nuances. The scheduler must follow this completed flight schedule closely in case a training

mission scheduled the day prior is not completed; if so he must make provisions on the next days' schedule to cover the missed training. All these inputs and fluctuations combine to make the task of flight schedule construction a fluid performance.

2. System requirements and utilization

The expert system used to automate this function must have access to every information source listed above, and must have that informations' current status. It would be possible to develop an expert system that could suggest a possible flight schedule for the day, based on its own established monthly training schedule or one established for it. It must also track the days' events, and make alterations to the schedule based on completed or incompleted flights, and remaining flight and flightcrew priorities. Its utility would be to relieve at least one and possibly more officers of the daily requirement to write the schedule. It would improve the efficiency of squadron employment of assets by ensuring that the top priority flightcrew is placed in the next available mission. It would thus maximize training and hopefully reduce costs in the process by eliminating the need to refly missions on other days. It would respond more quickly to the ever-changing requirements levied on the squadron schedulers aboard ship, again reducing the possibilities of scheduling an inappropriate flightcrew

for the wrong mission because of the press of time. It would automatically maintain the squadron at its maximum C-rating possible with the assets available.

3. Method of Accomplishment

The suggested procedure to accomplish this task would be to use the PROLOG language and write a shell program around the existing SIMS. The SIMS would need to be enhanced with one additional configuration that would take a knowledgeable developer approximately thirty to forty minutes to create. This new configuration would be comprised essentially of a target/training area schedule, holding in it those areas that have been reserved. With the addition to the SIMS of this configuration, it would then have all the required databases needed for the expert shell program to access. Flightcrew availibility can be obtained from the Snivel Log configuration and the individual flightcrews' wheelbooks for personal appointments. Alternatively, a file could be created within the SIMS that the flightcrew would use as a personal "dialogue interface" with the automated scheduler, informing it of their availability. This file could easily be designed using the existing DataFlex software. Aircraft availability is obtained either from the NALCOMIS database or a simple configuration written for the purpose using DataFlex. The database for training

requirements already exists within the present SIMS, and can be accessed by the shell program.

PROLOG is a language that utilizes deductive reasoning to come to logical conclusions within a program, as opposed to the most familar procedural form of processing within fourth generation machines. [Ref. 6] PROLOG is available now to general users, and can be 'shelled' around most relational databases and other programs to create expert systems, natural language interfaces, or an interactive knowledge base. The application of PROLOG to the SIMS is a natural and achievable extension of squadron information management. With very small additions to the SIMS, an expert system can be constructed that would act as a shell around the present SIMS, providing the squadron with the benefits described above.

The most strident advantage of this technology is that it can be totally written and implemented by students at the Naval Postgraduate School and still accomplish the objectives noted in the above paragraphs. The level of sophistication is such that it would require nothing more than good PROLOG programming expertise and a knowledge of the standard rules used by schedulers to accomplish the task. The database is already in existence, in the form of the SIMS. It could be achieved with essentially no cost to

the government, as a thesis topic for an interested student.

B. MAINTENANCE SCHEDULING

1. Background

Today's naval tactical squadrons rise or fall on the strength of their maintenance departments. The fluid environment surrounding the operational pace of current fleet activities would far exceed a more rigidly structured organization, yet the maintenance departments have learned to adapt to this arena. Most maintenance departments have been eminently successful in handling the stresses and decisions that fleet operations demand. Some have been less so.

The reason for a successful maintenance department rests largely with the enormous amount of accumulated experience possessed by its senior enlisted management personnel. This 'corporate memory' carries an immense store of knowledge and experience in dealing with the rapid-paced and sometimes extraordinarily complicated maintenance situations that arise. In less successful departments, this 'knowledge base' is less extensive. Although the ability to communicate this experience to subordinates is indeed crucial to a good maintenance department, if the experience is not there to communicate, no amount of fine management techniques will solve the

problem. The Navy has resident an immense storehouse of maintenance knowledge accumulated over decades by dedicated, hard-working, knowledgeable maintenance personnel. It should make use of this knowledge base.

2. System Requirements and Utilization

The maintenance scheduling system must take into account several factors to properly accomplish its function. It should be able to incorporate the present skill level of the squadrons' maintenance personnel, and the current status of aircraft, parts, and repairables, in addition to ancillary equipment controlled by the maintenance department, such as GSE and handling equipment. It should also mold the above two factors with the third, an extensive knowledge base developed by the Navy for use by squadron maintenance personnel.

The system should handle all maintenance work scheduling, including suggestions to the human managers about those actually working on the aircraft, ensuring those performing the work have the necessary qualifications. (NALCOMIS will have the capability to check personnel assigned against qualification requirements, but will not make suggestions about those assignments) The system should also track the operations priorities, allocating the maintenance assets available to upcoming requirements in the most efficient fashion. It should know which upcoming flight would be of most benefit

in advancing the overall combat readiness of the squadron and assign the maintenance priorities on that basis. The system should have the capability to accept easily input priority levels by the human managers. The pace of fleet operations demand that the users have the option to alter the priorities utilized by the system in making decisions, as these priorities actually change. These priority inputs should be easily accomplished by squadron maintenance personnel. The system should respond to queries about any piece of information within the data base, enabling the human manager to better control the total maintenance effort. It should of course handle all personnel management and administrative detail involved in squadron maintenance, and present any of that information on demand by authorized users. It should have the capability to transfer its database to other locations to permit inspecting authorities to conduct the standard inspections without visiting the squadrons. The system should have the ability to suggest troubleshooting procedures by drawing on a vast data base of experience and past malfunctions. And lastly, it should have the capability to "learn", adding to its database experiences or situations and their subsequent solutions, and then pass that experience on to other squadron databases, amplifying Navy-wide knowledge and experience.

3. System Development

There would be three basic modules to this maintenance system. The first module would be comprised of the squadrons' comprehensive database. The second module would consist of the Navy-wide maintenance database with its accumulated knowledge and experience. The third module would be the controller, directing the execution of the expert system in accessing the respective databases, plus taking the priority inputs and any adjustments to the logic rules required. This third module would be the interface between the system and the user.

The first module exists now. The NALCOMIS system is sufficiently comprehensive to provide the expert system with the required information needed to derive the current status of squadron maintenance concerns, plus the personnel and administrative details.

The second module would need to be developed, according to the procedures used now to construct knowledge bases for expert systems. This would be an ambitious project, requiring an extensive research effort. This module would be developed in the same fashion as the knowledge base for medical diagnosis, existing now, was developed. This knowledge base would hold various categories of information. It should include Navy experts' priorities for dealing with the numerous situations ('hueristics') that arise in the daily maintenance

routine. A category should include known or garnered solutions to aircraft malfunctions, a "troubleshooting" diagnostic database. Lastly, it should have another category that posesses two subsets. The first subset would be a type buffer area, or storage facility for knowledge, operating just as RAM functions within computer. The second subset would relate to the first as does, for example, a hard disk storage system to RAM. This second subset would be the repository for new acquisitions, constant additions to the database experience and knowledge. It would transfer that knowledge periodically or on request into the first subset, there to be accessed by the functioning, on-line system. The second subset could be copied and transferred, adding its accumulated knowledge to another systems' corresponding second subset.

The third module would hold the executable operating procedures of the expert system. This would include the rules of logic used to make the required decisions based on the data within the knowledge and data bases. These rules would be the result of research into Navy experts' procedures for dealing with situations in general. Hueristic approaches to maintenance solutions exist, and can be installed in this module to facilitate control of database access. In addition to storing the hueristics in hierarchial fashion, this module must have

the capability to interface with the user and deal with alterations to the standard priority systems.

C. SUMMARY

It may be noted that the two postulated expert systems described above would fit well as subsystems within one all-encompassing expert system for the entire squadron. This is the ultimate and attainable solution. The level of technology now permits the development and implementation of this system. Utilizing the NALCOMIS hardware and database, a complete squadron expert system could be designed around the combined NALCOMIS and SIMS databases. Administrative and safety concerns will be forthcoming in one of the two data sources, which would complete the knowledge base.

This "Squadron Expert System" has unique reasons for its development and implementation. No other organization functions quite like the sea-going Navy squadron. With enormous financial and personnel assets under its control, it is transportable, flexible, and responsive to a fault. Decisions concerning its operation, maintenance, and personnel all affect its safety. Individual squadrons should have the benefit of decades of experience and knowledge instantly accessible to enhance their decisions, improving their safety. They can have that access by incorporating the suggested development.

Additionally, when such an information system is installed and operating within Navy squadrons, it will dramatically reduce the required manning levels that are of such concern with units that deploy. The attendant reduction in the required number of billets that must deploy, coupled with increased efficiency and professionalism the system will generate, should improve morale and retention among those affected.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. SIMS CONCLUSIONS

1. Meeting the Squadron's Needs

The SIMS was designed to facilitate the administrative procedures in the Operations department of a fleet A-7 or F/A-18 squadron. It was designed to handle all the reporting and documentation requirements now encountered by those squadrons, in addition to providing each officer with the ability to automate his own particular billet within the Operations department. It was designed to change the way Operations departments handle, manage, store, and report their information. To usher in a new, more efficient information system.

The finished product has accomplished its design goals. It gives the Operations department the integration and relational database power to shift their time priorities. No longer must they spend the majority of their time on administrative tasks. With the entire Operations database available and indexed for easy reporting and query, more time can be spent on tactical and professional concerns.

The flight schedule has been completely automated, integrating the rough schedule construction process with completion of the smooth schedule and training and

ordnance reporting. Each pilot has a master file that tracks his flight time, training, and personal information. Every officer has their own set of configurations specifically tailored to their billets, giving them an electronic filing system with the capabilities of a relational database.

A complete User's Manual has been produced for the software. The Manual was written solely for the Fleet pilot, comprehensive, and easy to understand.

The development code and file definitions have been included for the system developer to modify according to changing needs.

There are a number of possible conclusions concerning the reception and impact of the SIMS on the Fleet. Possibilities are:

1. It will face inertia in its bid for acceptance. The intimidation of computer technology, coupled with the ingrained administrative habits built over decades, present a formidable obstacle to overcome.

2. The need for a change in the information systems currently utilized in Fleet squadrons is well-known. Solutions are eagerly sought by those in positions of authority. Coupled with the very low cost of the SIMS, these factors will be its strongest point for acceptance.

3. If accepted, it will radically change the information system presently in use in the Operations departments in Fleet squadrons. It will not change WHAT information is managed, but only HOW that information is managed.

4. Used properly, the SIMS will save man-months in time for the officers in the Operations department. No longer will old flight schedules, yellow sheets, or any old records be searched for information. The data will be accessible and easy to extract. Reports will take minutes instead of days.

5. The SIMS will provide continuity in billet performance for the Operations department. No longer will an officer be required to revamp entire job procedures because of poor performance by his predecessor, or suffer inadequate performance himself while attempting to learn a new billet.

6. With the increase in time available to devote to tactical and professional concerns, the Operations officers should improve their knowledge of the aircraft, their weapons, the threats they face, and their tactical awareness.

7. With the implementation of networking in the Operations department, the officers will view this as strong interest on the Navy's part to relieve them of the detracting effects of their non-flying collateral duties. This perceived interest will improve the morale of those officers who feel the Navy has relegated them to 'tactical backwaters'.

8. With networking in squadrons, the working atmosphere will become more professional, the routine more standardized, and the officers will feel like they are in an organization that cares enough to give them the right tools for the job.

9. It will let the Operations officer lead his department and let the Training officer concentrate on finding better ways to train his people. It will let each officer have the time to really do his ground jobs with a quality not yet attainable by the majority of fleet officers.

10. The SIMS can lower the required manning level for pilots in squadrons with the implementation of a network. With a networked SIMS, only two officers are really needed to run the entire Operations department, with the Operations officer monitoring their progress.

11. Finally, the overall effect of the SIMS should be to improve the combat readiness of the squadron by giving the officers the time they have needed for so long to study and train for the high-technology world of modern air warfare.

The SIMS will help the community take that first step towards changing their information management systems. It is a very easy system to master, and comparatively small in scope compared to large vendor networks such as the NALCOMIS system. It is upgradable, and transportable to most any other system the Navy has envisioned for the squadrons in the future. It will work on the NALCOMIS system hardware. It was written by Fleet pilots for Fleet pilots to help them become better Fleet pilots.

2. Recommendations

There are several recommendations that could be made at the squadron level concerning hardware and specific software arrangements permissible by the SIMS and its technology. These recommendations and further advice concerning the system setup and installation may be obtained by contacting the Aeronautical Engineering curriculum officer at the Naval Postgraduate School. This section will deal with recommendations to the command structure concerning the overall implementation and use of the SIMS in the Wings.

The first recommendation is to identify one individual at Wing staff level to become familiar with the DataFlex language and coding for the SIMS. This individual will be referred to as the "developer" throughout the User's Manual. He will be responsible to answer questions concerning the details of the SIMS coding, and make changes as the need arises. His initial training period would take approximately three days to complete; the SIMS designers would meet with him and administer a personalized course of instruction designed to bring his system knowledge level to the required state.

The second recommendation is for the Wing staff to purchase a DataFlex developmental license and its associated software. This will give the developer the software necessary to maintain all SIMS in the entire Wing.

The third recommendation is to select one squadron in the Wing to run an evaluation of the SIMS. This evaluation period should be at least 90 days; longer if the squadron feels it necessary. During this time, questions and comments concerning alterations or additions to the basic code should be addressed. Ease of use and accuracy of data should be investigated. The designers and the local developer should be accessible during this preliminary phase. The evaluation should output polished,

squadron-tested code and implementation procedures, ready for Fleet-wide installation.

The fourth recommendation is that when installing the SIMS in a squadron, have the developer or system designers install and configure the hard disk or network system. Writing detailed installation procedures for software utilized on network architecture would be fruitless. The system will need to be installed once in front of the system manager, and then the system manager will have the requisite knowledge to perform the same task.

It is also recommended that the Navy install the SIMS in a network configuration within each squadron. The advantages of network technology dramatically increase the power and utility of the SIMS, increase the productivity of each of the officers, increase effective communications, and improve the combat readiness of the squadron. While the SIMS was designed with the ability to be used on one single computer, the inherent limited accessability of this mode of operation would dampen the utility of the software and hamper the goal of altering the basic way squadrons manage information. A squadron can not automate their information management system with only one computer.

The cost of this proposed network is minimal, and estimated to be less than $3000.00 per squadron.

The Zenith-248 microcomputer has been approved for contract purchase by Naval activities. The SIMS was designed with this computer and its capabilities foremost in consideration. It is highly recommended that purchases of these computers are made for the single-seat squadrons who are primarily in need of a re-vitalized information management system. These machines could form the core of an efficient, professional information system in the squadrons that need it most.

It is also recommended that those who purchase this equipment look seriously at the benefits and advantages provided by the acquisition of "hard card" technology, as opposed to "hard disk" storage systems. These will be much less prone to malfunction due to portable operations, and result in significant cost savings over the life-cyle of the squadron's information system.

The system designers recommend the Wing purchase or acquire a computer with at least 50MB of storage. With this amount, they can store several squadrons' databases, querying each for specific information. This machine can be the central database for exchange of information between the squadrons as well.

B. FUTURE POSSIBILITIES FOR SQUADRON AUTOMATION

Who can say how the aircraft carrier, with all its attendant weapon systems and aircraft, will evolve in the future? One thing certain to occur is the escalation of technology and complexity in future aircraft. Aircraft on the drawing board now, and those being conceived, rely heavily on onboard artificial intelligence and similar expert systems for mission management and aircraft survivability. The pilot of the future will have to be operationally familiar with these higher-technology aircraft; that requirement will demand most, if not all, of his time. He will have very little time to spend on administrative detail. Consequently, his squadron information system will almost certainly be automated.

The expert systems described in Chapter five of this thesis are types of systems that must be installed in squadrons for the pilots to have the time required to adequately fly and fight their newer aircraft. Flight and maintenance scheduling can be handled by these systems. When the expertise usually carried by senior enlisted personnel is centrally located in these expert systems, it removes the need for these personnel to deploy. These systems will dramatically reduce the number of people required to man squadrons. With present manning levels aboard a carrier, this is a very attractive capability.

The squadron of the future will fly aircraft that possess their own artificial intelligence systems, such as the Pilot's Assistant program in work at Lockheed Corporation. These systems will be used by the pilot from the beginning of his training to configure the interface between himself and the intelligent system and the aircraft. This arrangement will demand that some information concerning mission accomplishments, maintenance on the aircraft, and pilot performance be output to systems external to the aircraft. The squadrons must be set up to receive that data with some type of information management system. The automated systems employed by the squadron should have the ability to interface with the artificial intelligence systems aboard the aircraft. This will require an integrated design effort.

C. POSSIBILITIES FOR FUTURE WORK IN THIS AREA

There are several possible avenues to pursue in the field of squadron automation. They could extend and expand on the SIMS, or work in other related areas. First, a discussion of expanding the present SIMS.

1. Expanding the SIMS

The SIMS may be expanded several ways. Individuals could write code for the other departments, although they should check with the current progress of this item with

the Aeronautical Engineering curriculum officer at the Naval Postgraduate School.

Other squadrons could be automated using the basic SIMS package, with certain of the configurations modified to accomodate specific training needs.

The SIMS was designed to provide continued development, and as such may be termed "open-ended software". The PROLOG language offers exceptional possibilities to function as an expert system shell around the database already developed by the SIMS, for scheduling and other relevant applications.

2. Other Areas of Squadron Automation

The PROLOG language and the evolving NALCOMIS system from Honeywell Corporation offer an exciting marriage possibility. Work in combining the PROLOG shell around the NALCOMIS database that would not interfere with the working code could result in outstanding maintenance scheduling programs and a reduction of the number of personnel required to deploy.

A fascinating option for future work includes research on the interface that will be required between the aircraft of the future, with its own artificial intelligence systems, and the squadron automated systems. A tactical mission planner could be developed, with the results from its program taken aboard the aircraft for

real-time mission execution or for in-house mission simulation..

There are numerous possibilities for further research. This field needs further expansion if the Navy desires to continue its policy of having the pilots both fly and fight their aircraft at peak efficiency, and still administratively maintain their squadron.

LIST OF REFERENCES

1. Norton, C. P. and Langley, F. M., Feasability and Requirements Analysis of MIS for Operational Patrol Squadrons in the United States Navy, Master's Thesis, Naval Postgraduate School, Monterey, California, December 1981.

2. DataAccess Corporation, DataFlex User's Manual, Version 2.1B, December 1984.

3. Commander, Light Attack Wing Pacific Fleet, Instruction 5041.1E, COMLATWINGPAC Command Inspection Program, 2 April 1985.

4. Commander, Light Attack Wing Pacific Fleet, Instruction 3500.3E, COMLATWINGPAC Training and Readiness Manual, 24 January 1985.

5. Nutter, C., Computer-Aided Tactical Mission Planning Program for the A-7E Corsair II, Master's Thesis, Naval Postgraduate School, Monterey, California, September 1986.

6. Borland International Inc., Turbo Prolog, p. 3, 1986.

BIBLIOGRAPHY

A. Barr, A. and Feigenbaum, E. A., Handbook of Artificial Intelligence, v. I, HeurisTech Press and William Kaufmann, Inc., 1981.

B. Minsky, M., Semantic Information Processing, The MIT Press, 1968.

C. Hayes, J. E., Michie, D., and Y-H, PAO, Machine Intelligence, v. 10, John Wiley & Sons, Inc. 1982.

D. Rausa, R., "To Fly Safely," Naval Institute Proceedings, v. 112/8/1002, pp. 69-73, August 1986.

E. George, F. H., Models of Thinking, George Allen and Unwin LTD, 1970.

F. Gevarter, W. B., Intelligent Machines: An Introductory Perspective of Artificial Intelligence and Robotics, Prentiss Hall, Inc., 1985.

G. Haugeland, J., Artificial Intelligence: The Very Idea, MIT Press, 1985.

H. Archer, R., The Practical Guide to Local Area Networks, McGraw-Hill, 1986.

I. Digital Equipment Corporation, Networking: The Competitive Edge, 1985.

J. Secretary of the Navy Instruction 5231.1B, Life Cycle Management (LCM) Policy and Approval Requirements for Information System (IS) Projects, 8 March 1985.

K. Commander in Chief Pacific Fleet Instruction 5321.2B, Life Cycle Management (LCM) Policy and Approval Requirements for Information System (IS) Projects, 26 October 1985.

L. Commander Naval Air Forces Pacific Fleet Instruction 5231.1A, Life Cycle Management (LCM) Policy and Approval for Information System (IS) Projects, 2 May 1986.

APPENDIX A

USER'S MANUAL

SQUADRON INFORMATION MANAGEMENT SYSTEM

VERSION 1.00

DEVELOPED AT THE NAVAL POSTGRADUATE SCHOOL

AERONAUTICAL ENGINEERING DEPARTMENT

MONTEREY, CA.

USER'S MANUAL FOR:

A-7E CORSAIR II

F/A-18 HORNET

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Revision History

The present version of the SIMS is 1.00. This is the original version. Updates and further additions will be promulgated at a later date.

Package Contents

The SIMS package should come with the following items:

1. Five SIMS disks, A through E
2. Three major backup disks
3. Seven minor backup disks
4. A SIMS User's Manual
5. The System Manager's Reference Guide
6. System Manager's disk
7. If applicable, an additional SIMS disk labeled "Mission Planning" for A-7E squadrons
8. SIMS package container

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Acknowledgements

The system designers wish to acknowledge God for His inspiration and endurance imparted to complete the work. The good parts are His, and the bad parts are ours.

The designers would also like to thank Dr. R. Kolar for his invaluable assistance in the preparation of the SIMS project.

The designers would also like to acknowledge the assistance lent by the TACAIR officers attending the Naval Postgraduate School during the time period. In particular, Lt. C. Nutter was most helpful with suggestions and design points.

THE SQUADRON INFORMATION MANAGEMENT SYSTEM

The Squadron Information Management System (SIMS) is the name for relational database software custom-tailored to meet the information management needs of the Navy's tactical jet squadrons. The current version of the SIMS provides:

1. The ability for the Operations department in an A-7 or F/A-18 squadron to fully automate every function currently required by administrative directives.

2. Immediate status on training categories, OPTAR, C-ratings and many other areas.

3. The ability for every officer in the Operations department to fully automate his own area of responsibility using the squadron's computer or his own personal home computer.

4. Portability. The SIMS can be taken aboard ship easily. A portion may be sent on detachments while the main system remains at the squadron. It is completely responsive to the fluid environment of fleet service.

5. Supportability. In a few days, individuals in selected billets may be trained to develop their own additions or modifications to the original package for community-wide use. The SIMS requires no squadron on-site maintenance.

6. Multi-User/Networking capability. As is, the SIMS may be used on a single-user system or in a network. The SIMS is ready now for future implementation of networking in squadrons and is compatible with every common operating system.

7. Comprehensive and cohesive squadron information management. Subsequent additions to the SIMS will provide the same advantages listed above for the Administration, Safety, and Maintenance departments. With alterations it may used for any aircraft type.

With these and many more advantages, the SIMS will help slay the paper dragon in the TACAIR community, letting the pilots concentrate on their most demanding responsibility.... becoming a professional warrior.

WHAT YOU NEED

The SIMS is remarkably flexible. Consequently, the hardware and software you need to run the SIMS is highly dependent upon the particular system that you or the squadron own.

The Runtime Facility Requirement

The SIMS was developed using "application development software" called DATAFLEX. DATAFLEX is a powerful tool that helps a system architect construct a tailored information management system and/or relational data base to meet the needs of a particular customer, in much the same way a word-processing program helps a customer write a letter. The customer in our case is the fleet squadron, and the application is the SIMS.

In order to run the SIMS, the user or squadron must own a 'runtime facility'. This set of files, together with the already developed 'application files' (in our case the SIMS) make up the complete information management system. Without the runtime facility, the SIMS files are useless.

The runtime facility comes according to your operating system, and in either a single-user or

multi-user version. If you owned a machine that uses PC-DOS and only intended to use the SIMS by yourself, you would purchase a single-user PC-DOS runtime facility. If on the other hand you had a Zenith-248 in the squadron, and intended that all Operations officers would use the SIMS on a network, you would purchase a runtime facility for the particular network software you have.

Hardware Requirements

* The SIMS will run on any machine having the following Microprocessors: (If you are unsure of which one your machine has, consult your operating manual)

8080, Z-80, 8085, etc.
8086, 8088, 80186, 80286, etc.

* At least 192K Hardware Random Access Memory for 16-bit machines, or 53K Transient Program Area for 8-bit machines. (Again, check your manual if you have questions about your own machine)

* A CRT with addressable cursor. (Most current machines possess this capability)

* An installed hard disk or preferrably, a hard "card". Minimum storage suggested is 20 MB, while 30MB is preferrable. The "card" is preferred because the average fleet unit travels extensively, thereby making the card more cost-effective. The SIMS was designed to be used with a hard disk or card. The reason is that in a typical fleet squadron, there is an immense amount of data that needs to be 'on-line', available for the system to access immediately. Also, swapping disks would needlessly complicate the issue because of the particular, very attractive, characteristics of a relational database.

Software Requirements

* Operating Systems. The SIMS will run on any of the following operating systems:

MS-DOS, IBM PC-DOS 1.X, 2.X, 3.X, IBM NETWORK, CORVUS with IBM PC, PC-NET,PC-AT "XENIX", CP/M-80, CP/M-86, MP/M-86, Concurrent CP/M or MP/M-86, TurboDOS, NOVELL NETWARE, DMS Hi-NET, MOLECULAR N/STAR, ACTION DPC/OS, NCR DECISION-MATE, 3COM ETHER SERIES, NETWORK-OS, MICROMATION M/NET, InfoShare, DR-NET.

* The program diskettes for the SIMS.

1.0 INTRODUCTION

This section will introduce you to the Squadron Information Management System (SIMS) and the User's Manual that goes with it. It will discuss the reason why the SIMS was developed, the basic premises used in its design, and some of its capabilities and functions. There is also a small portion that covers "Basic Terms and Concepts", giving you an idea of what we will be referring to as we go through the descriptions in the User's Manual.

1.1 Some Development History

The SIMS was conceived by its designers on the way home from their first cruise, between Hawaii and California. The methods by which the squadrons, especially the single-seat squadrons, handled their information throughout the single-seat community was so inefficient and redundant as to significantly impact combat readiness. Desiring above all else to be the most proficient combat pilots they could be, the designers saw this mishandling of information and priorities as a stumbling block to combat readiness, and set out to remove it.

Naively so. The weight of years of accumulated inertia had so built up within the community that to conceive of conducting squadron routine any other way was difficult. Add to that the natural hesitancy and intimidation that came with using a computer, and the wall grew. But people persisted. Squadrons and Squadron CO's realized that with the new, more complicated machines now flying, they could not have their pilots handling information with antiquated methods AND have them proficient in the aircraft. Something had to be done to get the administrative monkey off their collective backs.

Secretary of the Navy Lehman issued a directive that sought to reduce paperwork in the squadrons by 50%. Additional ground officers were added to squadron manning levels to assist in administrative duties. The higher reaches of authority recognized and appreciated the problem. Unfortunately, nothing was being done to actually change the way squadrons manage their information. They have a lot of it, and it is crucial to proper squadron functioning and to report combat readiness.

NALCOMIS, an integrated system designed to handle much of the squadron's maintenance automation needs, has been scheduled for full-scale implementation into the fleet approximately 1989 or 1990. It will also have the ability to help to some degree with operations and administrative functions. NALCOMIS is under contract with Honeywell Corporation, and will be a fine system, eagerly awaited by the Fleet.

SIMS intends to bridge that gap of time between now and the full-scale implementation of NALCOMIS, cover some of the things that NALCOMIS will not, provide each officer with their own custom-tailored software, and most importantly help the community take that first step towards changing the way their squadrons manage information.

1.2 Reasons for the SIMS

The reasons to change the way the single-seat community manages its information are sometimes not so obvious. We believe most pilots realize they do an immense amount of paperwork compared to the amount of time they fly or prepare to fly. Maybe some think since that is the way it has always been, that is the way it has to be. We have a little test that you can take right here that will emphasize the need for a better way to handle our information. Without going anywhere else or using any other references, please answer the following questions:

- What cockpit switches are selected for a ROCKEYE if you want to drop it in the retarded mode?

- What are the head-on range envelopes for the AIM-9L?

- What weapons does the new MiG-29 carry, how far can they hit you, and what sort of lookdown capability does it have? What type of fight will give you the best advantage
  with the aircraft? (Turning rates, in-plane, vertical....)

- Should you engage a FROGFOOT in a turning fight on one engine? (F/A-18 pilots only) On two engines?

- If you jumped in your aircraft RIGHT NOW, could you fire a Harpoon in the TOO mode? Could you fire a Shrike in

changing combat conditions without taking a 50-mile run-in to give the range and yourself time to check switches?

You get our point. These and questions like them deal with topics that we usually only concern ourselves with three weeks before a CTPI, or preparing for an ORE. Why? Because we are too busy doing other things, and the squadrons have structured their entire routines to handle those other things. What if it took you 10 minutes to put out the Monthly Training and Readiness Report instead of 2 days? How would you spend the extra time? The SIMS will give you that extra time, but it will be up to you to make the best use of it you can. Forget the numbers, forget the statistics on combat readiness. Are YOU ready. There is only one seat in the cockpit.

Remember, if you are not ready to go to war tomorrow, you are not ready.

1.3 Basic Design Approach

The SIMS was designed by first going into the squadrons themselves and asking what they would like to see in an automation effort. The pilots were sharp, and knew they needed to change the way information is handled in their outfits. They realized they had their time priorities aligned improperly, and wanted to change them. The SIMS is the combined result of their input and the directives currently in place at the COMMANDER, LIGHT ATTACK WING, PACIFIC FLEET headquarters concerning administrative requirements and Training and Readiness instructions. The SIMS at times follows these instructions down to the precise format recommended, and as a result the officers will at times find the Training and Readiness instruction an excellent "User's Manual" by itself. We stuck to what the fleet pilots are now familiar with. There is nothing new, nothing fancy. If it is in the SIMS, it is because it is in either the Training and Readiness Instruction or the ADMAT Instruction.

The restrictions placed by the woeful condition of computer equipment in the squadrons were a serious design hindrance. Application development software had to be found that would be flexible enough to be used on the proposed squadron computer (a Zenith-248) AND ALSO be used

on any of the squadron officer's computers. Additionally, the software had to develop a system that could be used on any one of the common networks commercially available, because the stringent procurement rules for ADP equipment now in force would not allow the designers to select one particular network or operating system. Consequently, the SIMS is incredibly flexible and usable on most common (and some uncommon) networks. It will be usable on the NALCOMIS system when it finally arrives in the fleet. It is flexible and transportable only because it was designed that way.

The SIMS is NOT comparable or able to compete with some very high-class network office information management systems that could be developed by vendors such as Wang Labs, Digital Equipment Corporation or Honeywell Corporation. Honeywell has spent many dollars to bring NALCOMIS software to the Fleet. NALCOMIS will be an outstanding contribution to overall combat readiness.

SIMS is on a smaller scale. It does not do as much, but it is a step in the direction we need to take, and it does it right now.

1.4 Some Basic Terms and Concepts

This section will define some terms that you will come across through the Manual.

Field or Window:

In the SIMS configurations, you will be able to enter data, or information, in specific areas only. These areas are called windows, or fields. There are several different fields in the SIMS. There are data fields that will only accept date information, number fields that will only accept numbers, and alphanumeric fields that will accept any character you put in them.

A field is designed to hold a specific type of information. For example, there are fields to hold day trap numbers, or night instrument times, or snivels.

Record:

A record is a collection of fields. This collection of fields usually has something in common. For example,

each pilot master record is a collection of fields that all have that pilot in common. There are fields that hold total flight time, name, total traps, and training data. All those fields hold information for one pilot.

File:

A file is a collection of records. This inter-relationship between fields, records and files can best be illustrated by the following example. Let us say you have a filing drawer in your desk. In this filing drawer are all kinds of manilla folders where you keep training records on all the pilots. These are the standard NATOPS training records. Now, according to our analogy, your file drawer is a FILE. Each training record in that drawer is a RECORD. Every little space in an individual's training record that says whether he had fire fighting, or SERE, or DWEST, is called a FIELD. So you can see that there are a group of fields that make up one record, and a group of records that make up one file.

The SIMS does all this the same way electronically, using database technology melded with computer programming.

Database:

A database is any set of stored information. It can be a set of files, or one particular file, that holds information. Use the word "database" the way you use the word "aircraft". Aircraft can mean a whole gaggle of them, or it can mean the aircraft you happen to be flying in at the moment (singular). Same with a database. You can have a whole gaggle of them (which is all the SIMS is) and you can call one piece of it a database too. (like the "flight schedule" database)

Query:

Query means to interrogate, just as signals query your IFF transponder to identify your aircraft. You can "query" almost every database in the SIMS to get information you want when you want it, in any arrangement you need. Do you want to find out every pilot who has over 2000 total hours, has a Special card, and had a night trap at least six months ago? Query the SIMS database and it

will tell you. Getting information this way is call "extracting" it from the database.

Application:

Application is the term used when database or computer technology is "applied" to a specific area or organization to assist it in some way. The SIMS is an information management "application", which means that information management technology has been applied to fleet squadrons to better help them manage their information.

Configuration:

A configuration is the term used to describe a particular arrangement of fields that best help an officer or officers do the job needed. For example, the Flight Schedule "configuration" takes all those fields you normally fill in when you write the flight schedule and "configures them" into a database. The SIMS is made of many configurations. You can think of a configuration as something that takes the special requirements for that one area and specially configures those requirements by an arrangement of coded instructions that tell the computer what to do; a little like a computer program. Everyone knows what they are.

Report:

A report in the SIMS is the same as anywhere else. A Monthly Training and Readiness Report is a report. It is a collection of information specifically formatted to hold certain things that tell the recipient what he wants to know about your organization.

Developer:

This individual is referred to numerous times throughout the Manual. The SIMS is designed to have one individual at the Wing level who is familiar with the DataFlex language, able to get around inside the development code, and help you with any problems you might have.

Index:

An index is the way you store and retrieve information in a file or database. In the phone book, the index is alphabetical, by last name. In the squadron training records, it is seniority. On the Golden Tailhook award, the Index is the landing grade for the period, and whoever gets the highest is first. The SIMS configurations and reports all use particular indices, which are discussed in their descriptions.

1.5 How to Use This Manual

When writing a User's Manual for a piece of software, the authors must decide first and foremost, "Who is the audience?" Technical writers for manuals that describe software with a large market base such as word-processing programs have a difficult time knowing just how to phrase their documentation. The audience for the SIMS was always clear-cut to the designers. The Fleet pilot was and is our only concern, and is our main priority. As a result of knowing the audience, we use analogies in the User's Manual that may be unclear to the average reader. Observe the questions we asked in our little test. Would they apply to the average reader? This is a Fleet pilot's manual, written by and for Fleet pilots.

Chapter One gives a brief introduction to the SIMS, while Chapter Two describes essentially the system's "skeleton". It talks about the menu system, how to get where you want to go in the SIMS, and how the file structure is arranged and how the files relate to each other. Chapter Three helps you get started, discussing installation instruction, how to use the keyboard, get in and out of the system while you are learning your way around, and then talks about how to enter your pilots into the database if that happens to be your job. Chapter Four is the largest chapter, discussing each configuration individually, using a standard format. Chapter Five covers the customized report functions that are available to you in the SIMS, while Chapter Six finishes with a discussion about how to make the best use of the SIMS in the squadron. There is an appendix explaining the mission planning program for the A-7 version of the SIMS.

There are several utilities that come with the DataFlex software associated with the SIMS. The ones that apply to squadrons are the SETSCREEN program, the QUERY utility, and the Re-Index utility. The instructions for these utilities are contained within the DataFlex Instruction Manual. The Wing developer should have a copy of this manual, and instructions for these various utilities may be obtained from this individual.

2.0 SYSTEM STRUCTURE

This part of the manual will describe the overall structure of the SIMS; the Menu system, the file structure and file definitions, and how the files are arranged on the disks you receive in the SIMS package.

2.1 Menu System

2.1.1 Menu System Introduction

The SIMS is completely menu-driven. "Menu-Driven" means that you as the user are provided with a list of choices arranged on the screen, next to numbers, that specify particular areas of the application. To run a particular selection, you only need to press the number corresponding to your choice. The menu system eliminates the need for you to memorize numerous keystrokes and unnecessary entry procedures. Its intent is to permit you to walk through the SIMS quickly and find the precise area you need in the least amount of time.

The menu system also insulates you from the actual coding in the program. You only see the running system throught the "window" of the menu system. No alteration to the source code is possible within the squadron. This feature is designed to prevent inadvertant alterations by the inquisitive user that might result in degraded system performance or lost data.

Optionally, the squadron may decide to insulate the users from the entire operating system. The "Exit to Operating System" choice must be eliminated from the SIMS menu system, and then have the directory structure modified within the computer's hard disk. These steps can easily be accomplished by the Wing developer's developmental software and modifications to the AUTOEXEC.BAT file.

On many menus, you will notice the circumflex, '^'. This small character is next to choices within the menu system that have not yet been automated. The philosophy in the design was to "build the entire house, but furnish the rooms one by one." Right now only sections in the menu system that pertain to the Operations department are automated. Later versions of the SIMS may add the Safety,

Administration, and Maintenance departments. On selecting a choice that has the circumflex attached to it, you will see a small statement advising you that this portion of the SIMS is not yet completed. You may then press the ENTER key to return to the previous menu.

2.1.2 Menu System Development

The menu system is constructed by the system developer (or the system manager) with the use of a menu building utility within DataFlex. In using this utility the developer must specify, for each selection he makes available to the user, an action to be taken by the system. On one menu he may specify the choices to permit the user to select one of up to nine options. Next to each of those specified options in the utility, the developer must direct the program to accomplish a specific task based on the user's selection of that option. For example, next to the choice specifying "Liberty Elite Report", the developer will direct the program to "CHAIN" to the Liberty Elite report program. This "CHAIN" command is specific to the DataFlex language. It directs the program to go directly to the specified report, and once it is completed, return to the menu.

2.1.3 Menu System Operation

The menu system is easy to use. You can select a topic in one of two ways. A few seconds on the keyboard will allow you to become proficient in both methods. One way to make a choice is to simply press the corresponding number on the upper numeric row of your keyboard, and then press the ENTER key. The alternate method is to use the arrow keys on your keyboard to move the highlight up or down until it outlines your selection. Then press the ENTER key. In order to go to a previous menu, simply press the ESCAPE key. (These instructions also appear on the bottom of each menu screen) In this fashion you can step forward and backward through the entire menu system.

When you have finished your work in a particular configuration or report, the program will return you to the menu from which you selected that topic.

2.1.4 Menu System Description

This section describes each menu, and tells you which configuration or report is found in each menu. Within this section, the names of the particular menus are CAPITALIZED for easy reference. For a description of a particular configuration, see Chapter Four in the User's Manual (Appendix A). See Chapter Five in the User's Manual for a description of the reports.

ACCESS menu

This menu has only one selection; you simply press the ENTER key. This will take you to the frontispiece for the SIMS, showing you the current commanding officer and requiring you to enter your last name, your first name, and your 7-digit I.D. number. The names and number will have to match those on file within the system managers' file for you to be permitted access to the SIMS. If they are, the SIMS will then bring up the MAIN menu. If you have mis-typed, or are not yet authorized to use the system, you will see a series of messages designed to give you a chance to retype the correct responses. If you exceed a number of these messages, the system will automatically lock, and you will be unable to enter. You must then see the System manager to re-open the SIMS.

MAIN menu

The MAIN menu contains the broadest categories in the SIMS. From this menu you continue on to more specific areas. The choices from the MAIN menu are as follows:

Command - this choice will take you to the COMMAND menu.

Departments - this choice will take you to the DEPARTMENTS menu.

Reports - this choice will take you to the OPS DEPARTMENT REPORTS menu.

Queries - this choice will take you directly to the Query utility provided within the SIMS. This is a powerful tool used to extract specific information from your

various configurations. The Query utility is more extensively described Appendix A.2.

Emergency - this choice was included to permit instant access to the NATOPS boldface section while the system is in operation. This choice will also be present in several other menus, allowing you to get to the boldface without going through numerous selections. The intent in future versions is to have the NATOPS boldface in a file that is instantly accessed by this choice. SIMS 1.00 does not have the feature installed.

COMMAND menu

This menu directs you to areas that hold those files used primarily by the Commanding officer, the Executive officer, and the Command Master Chief. The present version of the SIMS does not have these files installed. These files will be developed in the future using input from fleet Commanding officers, Executive officers, and Command Master Chiefs.

DEPARTMENTS menu

This menu is the branching point to each department in the squadron. As mentioned, the only selection that contains working files is the Operations department. There is also the Emergency option in this menu.

OPERATIONS DEPARTMENT menu

This menu divides the Operations department into the functional levels used by the SIMS. You have the choice of which level to select, based on your requirements. The selections are:

Ops System Files - this selection is usually only used by the system manager. Choosing this selection will take you to the SYSTEM FILES menu.

Level One - this level holds the "master level" configurations for the Operations data base, including the flightcrew master files. Choosing this options will take you to the LEVEL ONE menu.

Level Two - this level holds configurations that apply broadly to all officers within the department, such as the snivel log, the SDO list, and an Officers' bulletin board. Choosing this menu will take you to the LEVEL TWO menu.

Level Three - This level holds configurations that apply to individual officers, such as the Operations officer, the Training officer, etc. Choosing this option will take you to the LEVEL THREE menu.

Flight - this selection holds configurations designed to be utilized by flightcrews during flight briefings and debriefings, in addition to areas provided for intelligence information and target graphics. Choosing this selection will take you to the FLIGHT menu.

Emergency - again, this choice will bring you immediately to the boldface procedures within NATOPS in future versions.

FLIGHT menu

The selections available are:

Briefing - this selection will take you directly to a configuration that functions as a briefing guide for the flightcrews. It will be developed along the same lines as those guides now incorporated in the fleet. Additionally, it will document each topic covered in the brief, the date, the type of mission briefed, and other relevant information. The present version of the SIMS does not have this configuration installed.

Debriefing - this selection will operate in the same fashion as the Briefing configuration. It will provide a standard debriefing checklist similar to those now used in the fleet, plus document the types of missions and topics debriefed, the date, plus other relevant information. The present version of the SIMS does not have this configuration installed.

Flight performance - this selection will permit flightcrews to use a mission planning program for tactical considerations and for aircraft performance calculations. In the A7 version of the SIMS, this program is available. See Appendix A.1 for a more detailed description of the

program. For the F/A-18 version of the SIMS, no program as yet exists.

Intelligence - this selection will hold configurations designed to provide the flightcrews with updated intelligence information pertinent to their mission. Adequate security measures will of course be implemented for the level of classification required. This configuration will be maintained by the squadron intelligence officers. SIMS 1.00 does not have this configuration installed.

Target Graphics - this selection was included for future versions to incorporate high-quality graphics programs that permit flightcrews to view computer-enhanced displays of their prospective targets, such as three-dimensional views of surface vessels or aircraft, or a computer-generated view of a particular geographic target area. The present version of the SIMS does not have these programs installed.

SYSTEM FILES menu

The SYSTEM FILES menu organizes the configurations used primarily by the System manager. The selections are:

System Manager's File - this selection will take you to the system manager's configuration. This configuration holds the names and numbers of those individuals authorized entry into the SIMS.

System Daily File - this selection will take you to the Daily file configuration. This configuration holds the general squadron data, including the name and location, the current readiness data, and a software lock on the flight schedule configuration. This can be open to anyone, or selected individuals, or only the system manager. The choice can be made by the squadron.

System Lock - this file, open only to the system manager, holds a software lock to the entire SIMS.

Re-Index Utility - this program will permit the system manager to recover data lost from power fluctuations or other hardware difficuties. The Re-Index utility is more completely described in Appendix A.3.

Worm Program - this program is used by the system manager and two others to eliminate major portions of the flight schedule and yellow sheet databases on a semi-annual or annual basis. It is more completely described in Chapter Six of the User's Manual.

LEVEL ONE menu

The LEVEL ONE menu directs you to those configurations that are of major importance to the flow of data within the SIMS. Hence they are at "Level One". In data base terminology, these configurations hold the "lower" or "master" files. The selections are:

Flightcrew Master files - this selection will take you to the flightcrew master files configuration. This configuration holds much of the information for individual flightcrews that concerns an Operations department.

The Yellow Sheets - this selection will take you to a configuration designed to permit easy entry of the yellow sheets into the SIMS.

Quarterly Date Information - this selection takes you to a configuration that holds the beginning and ending dates for the respective quarters throughout the year. You must enter these as the year changes.

LEVEL TWO menu

The LEVEL TWO menu directs you to configurations that apply over a general level of Operations department activity. The selections are:

Operations Department Mailbox - this selection takes you to a configuration that may be used in a number of ways. Its primary purpose is for the exchange of messages between officers in the Ops department.

Snivel Log - this selection will take you to the Snivel Log configuration.

The Officers' Board - this selection will take you to a configuration designed to be used as a bulletin board within the Operations department.

Ops Inspection Discrepancies - this selection will take you to a configuration file that will hold all inspection discrepancies for the Ops department.

Ops/Training Interchange - this selection will take you to the configuration that permits the Operations officer and the Training officer to exchange information on topics of concern to both.

SDO List - this selection will take you to the SDO roster.

The Flight Schedule - this selection will take you to the Flight Schedule configuration.

LEVEL THREE menu

The LEVEL THREE menu permits you to select configurations applicable to a particular job from a list of every billet within current fleet squadrons. This is the highest 'level' within the SIMS, directing you to a particular officers' configurations. The selections are:

Operations Officer - this selection will take you to the OPERATIONS OFFICER menu.

Training Officer - this selection will take you to the TRAINING OFFICER menu.

Weapons Training Officer - this selection will take you to the WTO menu.

Schedules Officer - this selection will take you to the SCHEDULES OFFICER menu.

Nuclear Safety Officer - this selection will take you to the NSO menu.

Landing Signal Officer - this selection will take you to the LSO menu.

OPERATIONS OFFICER menu

The following is a list of the configurations available to the Operationss officer from the OPERATIONS OFFICER menu. The selections are:

Operations Officer Wheelbook
OPTAR Inputs
CPFH/CPS Inputs
OPTAR Reduction Ideas
Training Plan Series - this selection will take you to the TRAINING PLAN SERIES menu.

TRAINING PLAN SERIES menu

This menu directs you to configurations that follow the current training and readiness manuals' format for constructing a Turnaround Training Plan. The selections are:

Ops Calendar/Trng Commentary
Operations Training Calendar
Aircraft Receipts/Transfers
Flightcrew Gains/Losses
Officer Grnd Trng/Schools Req
Maintenance Training
Manning Deficiencies
Projections and Readiness Levels - this selection takes you to the PROJECTIONS AND READINESS menu.

PROJECTIONS AND READINESS menu

This menu directs you to configurations you would use for projections for the turnaround training plan, plus other daily or quarterly projections needed. The selections are:

OPTAR projections
Ordnance Projections
TEMADD Projections
Programmed SQDN PMA levels

TRAINING OFFICER menu

The following is a list of configurations available to the training officer from the TRAINING OFFICER menu. The selections are:

Training Officer Wheelbook
Training Jackets
Weekly Training Plan
Ground Training Accomplished
Transfer File

WTO menu

The following is a list of configurations available to the WTO from the WTO menu. The selections are:

WTO Wheelbook
Ordnance Expended File
Weapons Training Plan
Tactical Publications File
Tactical Operations File
Tactical Manual Program - this program is not yet available in SIMS 1.00.

SCHEDULES OFFICER menu

The following is a list of configurations available to the Schedules Officer from the SCHEDULES OFFICER menu. The selections are:

Schedules Officer Wheelbook
The Flight Schedule
Simulator Scheduling

NSO menu

The following is a list of configurations available to the NSO from the NSO menu. The selections are:

NSO Wheelbook
NSO Training/Billets Assigned
Nuclear Safety Council Minutes
PRP Assignments/Evaluations

LSO menu

The following is a list of configurations available to the LSO from the LSO menu. The selections are:

LSO Wheelbook
Pilot Landing Grade Files
FCLP/Bounce Priority List
Trend Analysis

OPS DEPARTMENT REPORTS menu

This menu is the main 'junction' for the customized reports available to you within the SIMS. From this menu you can handle almost all of your reporting needs within the Operations department. The selections are:

Flight Time Reports - this selection will take you to the FLIGHT TIME REPORTS menu.

Greaseboard Series - this selection will take you to the introduction configuration for the Greaseboard series of reports available to you in the Operations department. From this introduction you can go on to use the reports within the series.

Monthly Trng/Readiness Series - this selection will take you to the introduction configuration for the Monthly Training and Readiness Reporting series. From this introduction you may continue on to the reports within the series.

OPTAR Series - this selection takes you to the first in a series of three reports designed to give you up-to-date information on your OPTAR status.

Individual Reports - this selection will take you to the INDIVIDUAL REPORTS menu.

FLIGHT TIME REPORTS menu

This menu directs you to reports that provide information on your flight time. The selections are:

Periodic Flight Time Summary - this selection will take you to the Periodic Flight Time Summary Report.

Quarterly Flight Time Summary - this selection will take you to the Quarterly Flight Time Summary Report.

Flight Hours Expended/Category - this selection will take you to the Flight Hours Expended/Category Report.

Total Times/Traps Report - this selection will take you to the Total Times/Traps Report.

INDIVIDUAL REPORTS menu

This menu provides you with the option of selecting one particular report that may be found elsewhere in another series. (You may only want to run one report without having to go through the entire series to get to it) The selections are:

Flight Schedule Report
Liberty Elite Report
Flight Simulators Report
Actual Cost/Mission Flt Hour
Snivels Report
Ordnance Expended Report
LSO Trend Analysis Report

2.2 FILE STRUCTURE AND DEFINITION

2.2.1 Introduction

This section begins with a discussion of the file structure that makes up the SIMS and then presents descriptions of the particular file extension names that comprise the SIMS files. For the average squadron user, this knowledge is not necessary to run the SIMS in a productive and efficient fashion. The information is only included to give subsequent system developers the background information they will require should they desire to modify portions to better suit their own particular needs. Knowledge of how the system is constructed would naturally contribute to any user's overall familiarity and comfort with its use, so if you have a particular interest, please continue on.

2.2.2 File Structure

2.2.2.1 Application Overview

The SIMS is a database "application". This application has been tailored to fit the needs of the F/A-18 and A-7 communities. This means that database technology has been "applied" to A-7 and F/A-18 squadron routines to help officers better handle information and reporting requirements. The present version only covers the Operations department of these communities.

This application, just like most other typical database information systems, consists of two main 'tools' that make the application work. The first tool is called a 'configuration', and the second is the 'report'.

A configuration is actually a database. (In this manual the words mean the same thing, and we will use them interchangeably to help you become comfortable with the terminology) The SIMS is comprised of many small configurations, and a few large ones. This means that the SIMS is not one giant database, but a collection of variously-sized databases. Each of these configurations, or databases, was designed for a particular purpose within the Operations department. Some configurations hold messages, some hold all the yellow sheet information, and others hold information of a particular type, such as the configuration designed to hold all the tactical operations the WTO has planned or has completed. These various configurations all hold their own respective pieces of information.

However, the SIMS is more than just a collection of databases. A simple collection of databases is just another fancy way to file information. The SIMS also has the capability to 'relate' a piece of information in one database to another in a second database. For example, when you enter the fact that a pilot flew a particular training mission in the Flight Schedule database, the SIMS automatically updates that pilots' training status in another database, using the rules established in the current training and readiness manual. (When these rules are changed or new ones added, it is a simple matter for the system developer to modify the code to handle the alterations) Systems that possess this relational capability are called "relational databases". This capability will save you a lot of time.

The second tool that helps run the overall application is the 'report.' The report does not store any information as does a configuration, but instead draws out ("extracts") particular information from the databases. Each report in the SIMS is designed to extract certain information out of one or two particular databases. For example, you may run the Liberty Elite report to see all the current training numbers for your flightcrews. This report goes into the configuration entitled "Flightcrew Master Files" to get information that it needs to present you with the information you want in a format you are familiar with.

Additionally, most of the reports in the SIMS have the capability to let you specify some options before it runs. For example, every squadron puts out a Monthly Flight Time Summary. The SIMS has a report to do this, but in so doing gives you more flexibility than you have had previously. At the beginning of the report, it asks you for a 'start date' and an 'ending date'. If you want a Monthly flight summary, simply enter the beginning and ending dates of the month you are interested in. If you would like a flight summary of your most recent at-sea period, you can have that too, by entering the appropriate dates.

Another option the reports have is whether you will have them output to the printer or the screen. Most of the time you will send your reports to the screen first to see the information they contain, and then send them to the printer for a hard copy.

These two tools, the configurations and the reports, are the main ingredients in the SIMS. They work together to help you store and recall information that you need to expedite your non-flying collateral duties and get on with the business of becoming a finer professional warrior.

2.2.2.2 The Configurations

File Relationship Terminology

Each configuration is extensively described in Chapter Four of the User's Manual. This section will discuss how these configurations fit together to make up the whole SIMS.

In database terminology, configurations are grouped, or classified, in a hierarchical structure. This means

that some databases are "higher", while others are "lower". We will use the terms 'higher' and 'lower' in our discussion because it fits what we are trying to convey, and because they are common terms used by those familiar with database technology.

Higher configurations do not refer to or draw on other files to build parts of their own records. They are the upper level of configurations, seen and utilized most often by the squadron users. Examples of these would be the individual officers' configurations. Lower configurations draw on the higher files to update or edit their records. As an example, the Flightcrew Master Files are lower configurations. When information is entered into the Yellow Sheet configuration, the system finds the proper flightcrew in the Flightcrew Master Files by using the name entered on the yellow sheet, and then adds the amount of flight time (and instrument time, and other information) noted on the yellow sheet into the flightcrew's total flight time information field. In this example, the higher file is the Yellow Sheet configuration, while the lower file is the Flightcrew Master File. The Yellow Sheet configuration did not refer to any other file to get the flight time information. The user entered the information. The Yellow Sheet configuration then made a new record in the Yellow Sheet files from what the user entered. The lower Flightcrew Master File got information from the yellow sheet entry and made an update to one of its records in its files. This is an example of how a higher file relates to a lower file. Lower files in applications tend to be "master-type" files, holding relatively few records (in our example only around 20 flightcrews) but drawing on a number of higher files to update those records automatically.

Overview of Configurations

The lowest level file in the current version of the SIMS is the Flightcrew Master File. This file takes information from the Yellow Sheet configuration and the Flight Schedule configuration to keep each flightcrews' record up-to-date. There is no need for any other low-level file within the Operations department because information does not "pool" in any other central location. The flightcrews are the primary concern for the Operations officers. The Flightcrew Master Files will be found in Level One of the menu system. As an aside, you will also find the Yellow Sheet and Quarterly Date Information

configurations on the same level, even though they do not relate to the other databases as a "lower" file. These configurations were placed here because they are accessed by one single individual and quite important, in the case of the Yellow Sheets, or are only entered once a year, in the case of the Quarterly Date Information configuration.

The next level of files is noted as Level Two in the menu system. The configurations at this level are databases that operate essentially without relating to any other database (with the exception of the Flight Schedule), but do contain information used by the majority of Operations officers. These configurations include the Operations department mailbox, the Snivel Log, an Officers' Bulletin Board, and of course the Flight Schedule. You can envision these as the "middle" level of files. Though they do not relate the input information to other databases, they do relate the input information to a broad base of people.

The highest level of files within the SIMS contains configurations that are designed to be used by the individual officers in the accomplishment of their collateral duties, noted on the menu system as those configurations in Level Three. These would include the list of configurations for the Operations officer, the Training officer, etc. Only those officers would have any use for their own configurations, because of the content and format. These configurations do not relate to any other databases, and they relate to only one particular individual. Consequently, they have been placed in the highest level.

2.2.2.3 Reports

Overview

The reports included in the SIMS do not follow the same file structure and relationship that the configurations possess. A report is just that,.. a tool by which you can extract the pertinent information from the database you are interested in. No information is stored in these reports, and so their relationship to other reports is not based on sharing input information. The reports are grouped in the SIMS more by what information they give you, and how they will be used. The menu system is used by the developer to group the reports according to

the way a squadron operations department needs the information presented. We grouped them this way to make it easier for you to extract the type of information you need in the least amount of time.

Report Groupings

The reports are grouped within several categories. They are:

Flight Time reports
Monthly Training and Readiness reports
OPTAR reports
Greaseboard reports
Individual reports

[for a complete description of which selections are available within each category, see Section 2.1, The Menu System, or Chapter Five of the User's Manual]

The Flight time reports handle information that has anything to do with flight time, such as the Periodic Flight Time summary (this is what the SIMS calls the Monthly Flight Time Summary), the Flight Hours Expended/Category report, and the Quarterly Flight Summary report. The Monthly Training and Readiness reports are actually a series of reports that give you the information you need to complete the Monthly Training and Readiness report. You select this choice, and the system takes you to an introduction configuration that describes each report in the series. You can read the introduction, or continue straight through to the reports. The OPTAR reports also are contained within a series, working the same way except there is no introductory configuration to this series; you go straight to the first report. The Greaseboard reports are in a series with an introduction configuration. The Greaseboard series of reports was designed to put the same information that now is up on most Operations officers' "greaseboards" on their desk, containing the days' up-to-date information in a neat report format.

The category of Individual reports was included to cover those reports that a particular officer might want to run that do not fall into the above four categories. Additionally, the individual report category includes some of the same reports that are found in series reports. These reports are those typically run most often and included in the individual report section to allow officers to run them without paging through an entire report series.

2.2.3 File Descriptions

2.2.3.1 File Definition Basics

Any file that you work with in computer applications must have a name. Typically, the file name is something that helps you recall what is in the file just by looking at the name. The designers of most computer operating systems also made provisions to group files according to the function they serve, allowing the computer programmer or developer to name his files so that he could immediately discern what was in the file, and what purpose the file served within the larger picture of the overall program. The little trick that 'flags' the function a file serves is called an extension. An extension is the combination of a period and three letters (in MS-DOS) that comes at the end of a file name. They look like COMMAND.COM , where COMMAND is the file name, and .COM is the extension. Another example found on a standard MS-DOS disk is the .BAT file. The BAT stands for BATCH, and is used as an extension on all files that function as batch files. You as a computer programmer or system developer can name any file and give it any extension that you wish. The SIMS files come with preassigned names for files and extensions, and the following sections will describe to you the functions performed by files with varying extensions. The extensions are the key to what the file does in DataFlex. For reference, as you read on in the next section, insert the appropriate disks specified next to the section heading into your computer's A drive and execute the DIRECTORY command. Note the file extensions contained on each disk.

2.2.3.2 File Extension Functions

.FLX files Disk A/Disk B

The filenames that have .FLX extensions are the real workhorses of your databases. They are the configuration, essentially. There is a .FLX file for every configuration and every report. The .FLX files hold all the compiled code that tells the system how a configuration runs, how it looks to you as a user, and what to do once data input is ended. You should consider the .FLX files a complete

set of "pots and pans" into which you put your ingredients; in this analogy, the data. The .FLX files accept your input, check it for accuracy and match it with acceptable entries for the particular data fields entered, and store it. A key thing for you to remember is that these .FLX files never change as you put data into the SIMS. You only need to make copies of these .FLX files once at the time you receive the new SIMS, and forget them. They do not need to be backed up as new data enters the system, just as you do not need a new set of pots and pans to cook a different recipe. Should you lose your system for whatever reason, simply re-copy your .FLX files back onto your hard disk and the system will work like new.

.DAT files Disk C

The .DAT files are the place where the actual data from your entries is stored within the system. As you can guess, these files grow as you continue to add information to the SIMS. There is a .DAT file for every configuration. Each time you enter a configuration, the .FLX file shows it to you and handles the interface between you and the SIMS. As you enter information and save it, that information goes directly into the .DAT file and is stored. You can see that as new information is added to the SIMS, these .DAT files will grow. These files will be the limiting factor on how much information you can have on your hard disk for a given period of time. These files definitely need to be backed up in accordance with the squadron's established backup policy.

Since you do not enter any information within the reports, you will not find any report file names that have .DAT file extensions appended. .DAT file extensions only accompany the databases. (Reports only have .FLX extensions)

.TAG files Disk C

These files hold all the names of the fields within a configuration, essentially "tagging" each data field. Each configuration has a .TAG file that holds all the right names for its data fields. For example, in the Operation Mailbox configuration, there are field names for "From", "To", "Subj:", etc. Each field name is a variable, and the system needs to keep track of each of its variables. It

does so with the .TAG files. These files do not change as you enter new information. You will not be changing how the fields are arranged within the configuration, so the .TAG files will not change. These files do not need to be backed up as do the .DAT files.

.K Files Disk D/Disk E

These file extensions actually appear on your disks as .K1, or .K2, etc. The .K files are index files for each of your configurations. If a configuration (database) is indexed, it will have a .K file. If it has only one index, it will have a .K1 file. If it has two indexes, it will have a .K1 file and a .K2 file. For three indexes, .K1, .K2, .K3, and so on. Each of your databases are indexed to make it easier for you to sort and recall your information on screen, in addition to letting you report on the stored information in an orderly fashion. A common example of an index in the phone book is by the individual's last name, alphabetically. Without that indexing system, it would take a lot longer to find your number. Just so with the information you put into the SIMS. You want some method of recalling that information that is easy and lets you get to just the right 'record' you are searching for as quickly as possible. A further description of indexing is found in the first chapter of the User's Manual.

Large configurations, such as the Flight Schedule, have numerous indexes. Within the Flight Schedule database, you can list flights by what mission they went out on, by the date, by the Flight Purpose Code, by the amount and type of ordnance they dropped, or five other methods.

Other File Extensions

The above name file extensions are the only ones you as a user will see in your SIMS package. Other files with different file extensions are used by the system developer to build the files that you see on your disks. Those file extension descriptions are found within the DataFlex manual, and do not require discussion here. The system developer will have access to the DataFlex manual, which contains a more comprehensive description of the developmental file names and extensions.

2.3 HOW FILES ARE ARRANGED ON DISKS

2.3.1 Introduction

This section will describe how the files are arranged on the disks that come with the complete SIMS package. This information is important for copying purposes and for better background, should you decide to take advantage of some optional methods of arranging the SIMS on your hard disk.

Keep in mind that the following discussion pertains only to version 1.00 of the SIMS. (SIMS 1.00)

2.3.2 Disk Arrangement

There are five distribution disks that come with SIMS 1.0. These disks contain all the files you need to operate the SIMS to fully automate your Operations department, when used in conjunction with the DataFlex Runtime facility. This Runtime facility is a collection of files that, together with the files you have in the SIMS package, complete the entire application. They relate to your SIMS files in the same way gasoline relates to your automobile. With no gas, the car does not run. Just so with the DataFlex Runtime files. Without these files your SIMS files will not run.

All total, to run your system, you should have six disks. They should be:

The DataFlex Runtime Facility
SIMS Disk A
SIMS Disk B
SIMS Disk C
SIMS Disk D
SIMS Disk E

2.3.3 File Arrangement on Disks

The following will describe which files are on which disk as shipped in the SIMS 1.0 package. The files on the DataFlex Runtime disk are not described here, as their file structure would only be of interest to the system developer.
If you have a question about the file extensions referenced in the following discussions, see section 2.2.3.

Disk A

Disk A contains all the Ops System .FLX files, and the Level One .FLX files. If you have a question about the Ops System files (since they have not yet been described) see the System Manager's Reference Guide. Also, a file called FILELIST.CFG has been placed on this disk. This file is only of interest to the system developer.

Disk B

Disk B contains the Level Two and Level Three .FLX files, all the report .FLX files, and all the files that run the Menu system.

Disk C

Disk C contains all the .DAT files, plus all the .TAG files.

Disk D

Disk D contains the Ops System Level .K files, the Level One and Level Two .K files, and some of the Level Three .K files.

Disk E

Disk E contains the remaining .K files for Level Three.

It should be mentioned that the arrangement of these files on disks is not critical to system performance. The SIMS is designed to work on a hard disk, so these files will be copied from the disk to the appropriate directory on your hard disk. The DataFlex runtime facility disk must be copied into your directory first. The order in which the remaining SIMS disks are copied makes no difference as long as you copy all the files from every disk into the proper directory. In the backup strategy, the backup command will look for the right file extension to backup as it executes. As long as the file is on the directory, it does not matter in which order they are arranged.

However, there is always an advantage to order and organization in any dealings with computers. For one, it helps you maintain a clear, orderly perspective on things when you execute procedures in a logical order, as opposed to randomly doing things. For this and other small reasons, it is recommended that you copy the disks onto your hard disk in the order the installation program suggests. Two other reasons for this are the ease in copying the files back from the hard disk to the disks should you ever decide to do so, and also for the small increase in speed attained when the files are arranged in the order they're shipped.

The files are arranged in the order they are to make it easy for you in the squadron to copy the appropriate files when you receive the SIMS package. Although this is described in more detail in the Installation Instructions for the system, when you receive the SIMS package simply make a number of copies of all the disks. When you file these copies away, you can easily refer to them again when you will need them. As the information grows in the databases, there will come a time when you will want to store all the old information and go back to "empty" data files (the .DAT files) because of the storage limitation on your hard disk. The time when this will happen will fluctuate with the style and method each squadron uses to manage its information. More about the limitations may be found in Chapter Six of the User's Manual.

3.0 GETTING STARTED

This part of the manual will tell you how to install your SIMS on the squadron's hard disk, explain the use of the keyboard, tell you how to get in and out of the system for easy access and termination of the first few learning sessions, and finally describe how to go about putting your pilots into the SIMS database.

3.1 INSTALLATION INSTRUCTIONS

3.1.1 Introduction

This section will describe how to install the SIMS package onto your hard disk to get your SIMS up and running.

The SIMS 1.00 package comes with the files needed to automate your Operations department. In addition to the files that come with the SIMS package, you will need the DataFlex runtime facility that is compatible with your operating system. If you have a computer that uses MS-DOS, you should have an MS-DOS Runtime Facility (MS-DOS 2.X or higher). If you have a computer that uses PC-DOS, you should have the PC-DOS Runtime Facility. If you have a network of computers, you should have the Runtime Facility that is compatible with your network software.

The installation of the SIMS has two basic parts. In Part one, the instructions tell you how to put all the files on your hard disk. The second part of the installation instructions comes directly from the DataFlex manual, and describes the SETSCREEN program. The instructions for running SETSCREEN are found in Appendix A.1 of the User's Manual. This program tells the Runtime Facility what type of terminal you have and how to set up the Flex-Keys. Flex-Keys are a trademark term that applies to the keys on your particular keyboard you use to accomplish the various functions in the SIMS. When you run the SETSCREEN program, you can specify many items that will further customize the SIMS to your particular needs. For example, one function of the SETSCREEN program is to establish how the SIMS will accept date information. You can set the format you are most comfortable with here in SETSCREEN. The following sections will take you through the installation procedure step by step. Follow them in the order described.

The commands that are used in the following section on procedures are based on MS-DOS (or PC-DOS) 2.1 or higher. If you have a different operating system, use the commands that accomplish the tasks being described by the commands given.

3.1.2 Procedures

TREAT ALL YOUR DISKS WITH EXTREME CARE

Step One:

The very first thing you should do is clear a space near your computer that will give you room to set out the following items:

The SIMS package
The SIMS User's Manual
The DataFlex Runtime Facility Disk
The Runtime Facility documentation
Your Operating System Manual

Step Two:

Go to the section in the SIMS User's Manual entitled "Package Contents" and confirm that you have all the required disks in the SIMS package. Again ensure that you have the proper Runtime Facility for your computer's operating system. Read the Preface in the SIMS User's Manual.

Step Three:

Make backup copies of each disk. To do this, refer to your operating system manual for the proper commands to format and copy disks. The number of copies you make is entirely up to you. It is suggested that you make three copies of each master disk. One should be a working copy, and two should be placed in secure, separate locations. Follow all the proper disk handling procedures while you work with your disks. After you have completed making your copies, store the master disks in a secure location. (the middle drawer in your desk is not a secure location)

Step Four:

Turn on your computer. Bring up your computer's operating system, and make the root directory on your hard disk drive the current directory. (if you have questions

about these terms, please see your operating system manual)

Step Five:

You must now make a new directory. This will be a sub-directory that is under your root directory. To do this, make sure you have your root directory as the current directory, as required by the previous step. Then, type the following command:

MD DIRECTORYNAME

Instead of "directoryname" above, you would obviously select a name for your sub-directory. The name you pick for the new sub-directory is up to you. Suggestions would be to call it the "Corsair" sub-directory if your squadron flies the A-7, or the "Hornet" sub-directory if you fly the F/A-18. The name is up to you.

Step Six:

Check your progress. You should now be looking at the standard C:> prompt. Type the command "CD /DIRECTORYNAME". If you have followed the instructions, you are now in the newly named sub-directory. You can check this by typing in the DIR command. If you see two lines that have "<DIR>" in them with no other files, you have completed the steps correctly and are ready to proceed. If you are having difficulty creating a sub-directory as described above, read your operating system manual for the complete description of directories and how they are created. This will be more than enough background information for you to whiz through the procedures outlined here.

Step Seven:

NOTE: FROM NOW ON, WHEN WE REFER TO A DISK, WE ARE REFERRING TO THE COPIES YOU HAVE MADE, NOT THE ORIGINAL MASTER DISK.

Now that you are in the new sub-directory, we can copy the disk files that you have onto the hard disk. Make sure that the new sub-directory is the current directory and then place the DataFlex Runtime disk (remember, the

copy, not the original master) in the A drive. Next to the C:> prompt, type the command:

COPY A:*.* C: and press the ENTER key.

This command will copy the files from the DataFlex Runtime disk to the newly-created sub-directory. MAKE SURE THAT YOU COPY THE RUNTIME DISK FIRST. Should you copy the SIMS Disk A and then the Runtime disk, your system will not run.

Step Eight:

You must now copy the remaining disks into the newly-created sub-directory. In step seven you copied the Runtime disk. Now you should use the same COPY A:*.* C: command and insert the SIMS disks in the A drive. Start by inserting SIMS Disk A in the A drive and entering the command COPY A:*.* C:. The computer will copy all the files on your SIMS Disk A into your new sub-directory. Next, insert the SIMS Disk B into the A drive and follow the same procedure. Continue until you have copied all the SIMS disks into the new sub-directory.

This is the end of Part one of the Installation instructions. You have successfully transferred the files on all your disks to the new sub-directory on your hard disk. In part two, you will run the SETSCREEN program to set up the Runtime files to be able to run on your particular computer, with your particular keyboard. Once the Runtime files know what type of computer you have and which keys you want to use as Flex-keys, the SIMS will be ready to go.

The second part to the instructions comes directly from the DataFlex manual. This is a standard arrangement between the system developer and the company that produces the Runtime files. The SETSCREEN program must be described in detail, and the company prefers that system developers let the DataFlex manual perform that function. Refer to these instructions after reading the note below, and when SETSCREEN is completed, return to this portion of the manual. (The Wing developer should have these instructions copied for your use)

NOTE: THE SETSCREEN INSTRUCTIONS REQUIRE THAT YOU HAVE THE DATAFLEX-SUPPLIED FILES "FILELIST.CFG" AND "TERMLIST.CFG" ON THE DEFAULT DISK DRIVE. (OR THE CURRENT DIRECTORY ON YOUR HARD DRIVE) YOU HAVE ALREADY MET THIS CONDITION IN THE FIRST PART OF THE INSTALLATION INSTRUCTIONS. YOU ONLY NEED TO MAKE SURE YOUR NEWLY-CREATED SUB-DIRECTORY IS THE CURRENT DIRECTORY BEFORE YOU TYPE "SETSCREE".

If you have completed SETSCREEN, you can now check to see if your system is up and running. Type FLEX. The computer should show you the SIMS access menu and present you with only one choice, "Access to System". If this happens, your SIMS is now up and running. If not, check to make sure that you are in the proper sub-directory.

Since you only have one choice, press the ENTER key. The next thing you will see is the SIMS cover page. The SIMS will ask you to type in your last name, your first name, and a 7-digit I.D. number. As you have no authorized names yet entered in the system, you must type a generic name that the system developer has included to allow access during installation. Type in GATTUSO for the last name, SALAMI for the first name, and 7777777 as the number. The system will open, and you will see the main menu. We suggest you select the option to exit to the operating system until such time as the system manager can install the proper authorized names. He will obviously erase the generic name from the authorization list after an appropriate amount of time.

NOTE: WE RECOMMEND THAT THE DEVELOPER IN PLACE AT THE WING STAFF LEVEL BE PRESENT TO ASSIST YOU DURING YOUR INSTALLATION. IF YOU ARE INSTALLING THE SIMS ON A NETWORK, MAKE SURE SOMEONE IS THERE WHO WILL INSTALL THE NETWORK SOFTWARE FIRST, AND FOLLOW THE NETWORK INSTALLATION MANUAL IF THERE ARE ANY ADDITIONAL PROCEDURES.

3.2.1 Introduction

This section will provide you with a clear explanation of how to use the keyboard and the Flex-Keys for data entry and file maintenance in the SIMS. This section is taken almost directly from the DataFlex User's Manual with permission from DataAccess Corporation.

DataFlex uses a set of command keys called "Flex-Keys", to execute many of the regularly used functions in the SIMS application. Examples of Flex-Keys are the FIND key, used to find a record in a database; SAVE, used to store a record in the database, etc. Further, since DataFlex may be used on such a wide variety of terminals and systems, we will address functions of the program by their Flex-Key name in the course of our discussion, rather than by the particular key on your terminal which has been established. This is done because the location of that command may vary from system to system. For example, we will refer to the ESCAPE command, or the ESCAPE Flex-Key, rather than the ESCAPE key itself. Some people may not have an ESCAPE key on their terminal and during the SETSCREEN program they may have established another key to perform the ESCAPE command function.

The SETSCREEN program (see section 3.1) is used to assign the DataFlex Flex-Key commands to a set of control or function keys on your keyboard. Part of its operation is to print a list of the commands and the keys to which they are currently assigned on your terminal. If you do not have a copy of that list, go to the SETSCREEN program now and print one for reference as we go through this section.

3.2.2 Functional Overview

The SIMS has the ability to accept data from the keyboard, check to make sure it is the proper type of data, and then store it on the computer's hard disk storage device. Once data is stored, you can retrieve (FIND) the data and display it on the CRT, and change or delete it. All of these capabilities may or may not be used within any one configuration.

Data entry and file maintenance are begun by selecting the desired configuration from the SIMS menu system. The screens are operated by the Flex-Key commands which you issue from the keyboard. The commands are assigned to certain keys, like the TAB key, or the ENTER key, during the SETSCREEN program. (If you have already run the SETSCREEN program at this reading, you have accomplished this) Once you have made these assignments to the various keys in the SETSCREEN program, all the configurations will operate exactly the same regardless of the file(s) being processed or the format of the configuration.

This feature helps improve your efficiency and reduces the opportunity for errors since there is a procedural continuity throughout the system. The execution of these commands soon becomes second nature. When a new or altered module is added to the system, no additional training or familiarization is required. As an example, on an IBM-style keyboard, if you were in the Mailbox configuration, you would press the TAB key to locate a particular record in a database. Should you move on to the Flight Schedule configuration, you would also use the TAB key when you wanted to find a record there.

The screens in SIMS are "active", which means they can execute data entry or file maintenance functions any time a Flex-Key command is issued.

3.2.3 Flex-Key Summary

This section will list the Flex-Key commands, the action that occurs, and explain what happens in the SIMS when that command is issued.

ESCAPE

Action:
This command terminates the present configuration that you may be in and returns you to the menu system. If you press the ESCAPE Flex-Key while in the menu system, it will take you to the previous menu.

Explanation:
When the ESCAPE command is issued, the SIMS begins the process of "shutting down local operations". All open data files are closed, and the control is returned to the menu system. It is important to note that when you issue the ESCAPE command, any data that is currently displayed is not acted on in any way. Note especially that if you have entered new data but not saved it to the disk using the SAVE command, should you press the ESCAPE Flex-Key that data will not be saved. This condition also applies to records that you FIND, and then edit. You must save the edited record before you issue the ESCAPE command or the new record will not be saved.

CLEAR

Action:
Clears all screen windows.

Explanation:
The function of the CLEAR command is very simple; to erase any data from the display windows only, and restore the fill character (usually an underscore) to all data windows. CLEAR has no effect whatsoever on the data stored in the database; it is solely a screen operation. CLEAR can be used as a "bail-out" procedure during editing. If a record has been called to the screen with the FIND command and an edit made that is not correct, CLEAR will erase the screen and preclude the bad edit from being written to the database. In the SIMS, there are configurations in which you must press the CLEAR Flex-Key twice to clear all the windows. This is to ease the task of data entry, and is explained further in the Configurations section.

RETURN

Action:
Terminate data entry in the window where the cursor is currently located and move the cursor to the first position in the next window.

Explanation:
The RETURN command ends data entry in one display window and moves the cursor to the next window. This command is almost always assigned to the RETURN or ENTER key on your terminal.

If you are entering data and the RETURN command is issued at the end of the last window of a configuration, the displayed information will be automatically saved to the database.

If you wish to skip over a window and not make an entry, simply press the RETURN key prior to entering any data. If the skipped field was designed to accept alphanumeric data, the field will be given the value of a string of spaces the length of the window. If it was designed to accept numeric data (like a window for simulated instrument time) it will be set to zero, which you will see displayed when you exit the window.

You can make the system automatically continue on to the next data window when you come to the end of the current entry window by setting the "auto-return" function to "on" in the SETSCREEN program.

BACK WINDOW

Action:
Moves the cursor from the window where the cursor is currently positioned back to the previous display window on the screen.

Explanation:
Self-explanatory.

FIND

Action:
Finds and displays the record which is associated with the key in the window where the cursor is currently positioned. If there is no data in the window, finds and

displays the record which is first key in the index for the field associated with the current window.

Explanation:

A screen image in a configuration will display a series of data windows where you can enter new information or recall existing information for display. Some of these windows are "key fields". In the SIMS, the key fields are noted in each configuration by an asterisk next to the field window. These key fields can be used to find records in the database associated with the data entered in the windows of the display. Generally, the first window in a configuration is a key field, though this is not always the case.

To illustrate the use of the FIND Flex-key, let's use the Flightcrew Master File configuration to explain. (There should be some data shipped in the database for demonstration purposes in this file) Call up the Operations department, and then go into Level One. Select the Flightcrew Master Files. The configuration will take a few seconds to come up on the screen. When it does, move the cursor with the arrow keys (the right arrow key) to the window that says "Flightcrew name", and press the FIND Flex-Key. On IBM-compatible computers, this will be the TAB key. Upon pressing the TAB key, a flightcrew name should come up, and the windows should fill with the appropriate data. Now press the CLEAR Flex-Key. The windows should clear. Now move the cursor again down to the Flightcrew name window and type in the single letter N. This time a different name will appear. You have instructed the SIMS to find any record in this particular database that has a flightcrew name that starts with the letter N. Had there not been a name that began with N in the database, it would have displayed the next name that occurred alphabetically after N. Now, press the CLEAR Flex-Key again and the windows will clear. This time move the cursor down to the window that says "Lineal Number", and press the FIND Flex-Key. This time a third name should come up. This name has the lowest lineal number of the demonstrator names. This is a demonstration of the flexibility and power of indexing, most often accessed by the FIND Flex-Key.

The FIND Flex-Key does not work if the cursor is in a field that is not indexed. You will get an error message.

SUPERFIND

Action:
On a screen display which contains data from multiple database files, this command will find a record by whichever key window the cursor is currently positioned in. Then the related records to the keyed record will be found and displayed to fill in all the data windows on the screen.

Explanation:
SIMS 1.00 does not make use of this Flex-Key, because there are no configurations that require its capabilities.

SAVE

Action:
Stores the displayed screen information to the disk. If the screen contains data from more than one file, data will be written to whatever files are part of the configuration.

Explanation:
The action of the SAVE command is to take the data displayed on the screen (or the configuration, if the configuration goes for more than one screen) and save it to the correct data file in the database. This can also be accomplished by pressing the RETURN Flex-Key while in the last window of a configuration.
There is no "EDIT" command in the SIMS. You edit by first calling a record from the database by using the FIND command, editing the record fields as you wish, and then executing the SAVE command. This saves the changed record into the database. Should you type incorrect or inaccurate information, you can press the CLEAR command prior to saving the information and the windows will clear, removing the "found" record from the screen without altering any data in the database.

DELETE

Action:
Removes the displayed record from the file and its key from the key list. A record must be found with the FIND command before it can be deleted.

Explanation:

The DELETE command removes a record from the database. You must first "FIND" the record with the FIND Flex-Key before you can delete it with this command. It is just the same as the requirement for you to take a manilla file folder out of a file drawer before you decide to throw it away. This is a powerful command, and you should be judicious with its use. Many weeks of accumulated data could be lost in a record should that record be called and deleted. Use this command in the same fashion that you go through your file drawer periodically and throw out old useless pieces of information. Be careful that you do not throw out information you might need, however. You can not get it back. If you have a question about whether you will need the information some day in the future, you can always print the record out to the printer before you delete it from the system.

PREVIOUS RECORD

Action:

Finds the record whose key immediately precedes the key in the window where the cursor is currently positioned.

Explanation:

When the cursor is in a window whose field is indexed (in the SIMS these fields are noted by an asterisk), pressing the PREVIOUS RECORD Flex-Key will cause the display to "back up" in the database to show you the previous record in that database. This key does not work when the cursor is in a field that is not indexed. You will get an error message.

NEXT RECORD

Action:

Finds the record whose key immediately follows the key in the window where the cursor is currently positioned.

Explanation:

When the cursor is in a window whose field is indexed, pressing the NEXT RECORD Flex-Key will cause the the display to "go forward" in the database to show you the next record in that database. It is as if you had a

file cabinet full of training records arranged by seniority, with the CO's record first and Rocket 99's record last. With your finger on the CO's record, you flip to the XO's record. The NEXT RECORD Flex-Key does this electronically through the established database. Of course, should you want to flip back to the CO's record, simply press the PREVIOUS RECORD Flex-Key.

PRINT SCREEN

Action:
Outputs the entire screen display to the printer.

Explanation:
This Flex-Key command will cause the image you see on the screen to be output to the printer. This is handy for printing a single record, or a small selection of records on paper for off-line reference. For example, you could call up an individual flightcrew's record in the Flightcrew Master File and print the first page to give him a complete up-to-date summary of his flight times. You could print the second page to give him a complete update on his training status.

USER 1 AND 2

Action:
On an IBM-style keyboard, the SIMS uses the F7 key and the F8 key as these USER 1 AND 2 Flex-keys. The F7 key is used to page backward in large configurations, while the F8 key is used to page forward.

Explanation:
These Flex-Keys were provided by DataFlex to permit the developer to make use of them as best suited the configurations. In some large configurations, we felt that it would be too inconvenient for you as the user to have to step through every window on every page, so we incorporated the USER keys to let you page forward and backward. They do not effect any data within the database when you use them; they are strictly a screen operation. Should you page forward from the last page in a configuration to the first, the action will not automatically save your data. (as does the automatic exiting of the last window in a configuration with the RETURN Flex-Key) The keys are provided for your

convenience. After a few trys, they will become second nature to use. Just make sure that you do not press the F6 key while attempting to page forward.

HELP

Action:
Displays HELP screens.

Explanation:
Pressing the HELP Flex-Key will cause a HELP screen to be displayed in configurations that have them. The SIMS 1.00 only has help screens in the QUERY utility. While using that portion of the SIMS, you may press F1 (on an IBM-style keyboard) and the help screen for that portion of the configuration will come up.

CALCULATE

Action:
Calculates the value of the expression entered. Calculations can be performed on the bottom line of the screen. This is a window edit key.

Explanation:
The SIMS has no configuration that would require you to make use of this Flex-Key. This is a capability included with DataFlex that the system developers of SIMS found no need to use. As a SIMS user, you need not concern yourself with this key.

DELETE CHARACTER

Action:
Deletes the data window character which is under the cursor. Characters to the right of the cursor will be moved one space to the left. This is a window edit key.

Explanation:
Self-explanatory.

INSERT CHARACTER

Action:
Inserts a space at the current cursor position in a screen window. Characters to the right of the cursor will be moved one space to the right. This is a window edit key.

Explanation:
Self-explanatory.

RIGHT AND LEFT ARROW KEYS

Action:
These keys non-destructively move the CRT cursor within a SIMS screen display window during data entry or editing. Pressing the down arrow key at the end of a data window will cause the cursor to exit the window and proceed to the next data window.

Explanation:
Self-explanatory.

BACKSPACE

Action:
Moves the cursor one space to the left in the screen window, deleting the character under the cursor as well as any characters to the right of the cursor.

Explanation:
Self-explanatory.

3.3 HOW TO GET IN AND OUT OF THE SYSTEM

3.3.1 Introduction

This section will describe how you can get into and out of the SIMS during this time you are just getting started. It is a very simple procedure after a few security measures are taken by the system manager. After this initial experimentation period, you will still use the same procedures to get in and out of the system. They are included here to prevent any inadvertent frustration for first time users.

A hint for first-time users. It will probably be to your advantage to press the CAPS LOCK key before you enter anything into the SIMS. It helps with the data appearance when you enter it, and if the passwords have been "set" in CAPITAL letters, typing the same lower-case letters will not make a match.

3.3.2 Authorization

In order for you to have access to the SIMS, your last name, first name, and a 7-digit number must have been placed in the system manager's database. It will be up to you to make sure that your name and number is correct when the system manager types it in. You spell your name the way you have always spelled it. Correctly. You want the SIMS to recognize the correct spelling, so make sure the system manager enters it correctly into his database.

Once your name and number has been entered into the system, you have authorization to enter the SIMS. The system manager should give you some general passwords you will need to get around the major portion of the SIMS. You may not have the ability to go everywhere within the SIMS, because some portions may be password-protected by those who use a particular area. For example, you may not have the password to get into the LSO's configurations. Without that password, you will just have to fly the ball and take the grades you get.

3.3.3 Procedures

Once you have the proper authorization, it is a simple matter to enter and exit the system. The computer will probably be left on during the time you are at the squadron, so there is no need to worry now about how to turn it on. If you know how to start it up, you are that much ahead of the game. The steps you need to take are listed below. Depending on where you are in the following "chain", start at the appropriate place.

Getting In:

From Scratch

First you will have to turn on the computer. Refer to your computer manual if you are unfamiliar with how to accomplish this. Once the machine is on, you will need your operating system on line. If you have a computer, it will probably be an simple step for you to turn on the machine and have your DOS (or other operating system) "booted". Do so. If you are unsure about how to "boot" your operating system, refer to your operating system manual. Once you have your operating system running properly, make the sub-directory that contains the SIMS

the current directory. Type the command FLEX, or another command that has been designed for your own squadron. This command will take you to the Access menu.

The Access Menu

This menu only presents you one choice, "Access to System". All you need to do is press the ENTER key to select that choice. The SIMS will send you to the squadron cover page.

Squadron Cover Page

This page shows you the name of the squadron and who is the present Commanding Officer. It will also show you the system status at the far right of the screen and in a little box at in lower portion of the screen. If the status shows that the system is open, you may proceed. If the system is locked, then only the system manager has the "secret password" that will get you in, so you will need to see him.

Assuming the system is open for now, you must enter your last name, your first name, and your 7-digit number, exactly as the system manager has entered it into his authorization database. If you do so correctly, you will see the cursor pop over to the "open" window of the display, pause a few seconds, and then take you right to the main system menu. You are in.

If you do not type in the right names and number, the SIMS will give you another chance, displaying a small message at the bottom of the screen to advise you of the fact. Try again, and if you are successful, the cursor will move over to the "open" window and you will find yourself into the system.

If you have forgotten your name, or your number, and keep trying to type them in, the SIMS will terminate your extra chances, lock the system, and refer you to the system manager to get it open again. It will assume you are an unauthorized user and lock the entire system. You probably do not want that to happen, especially if the system manager is on leave, so do not forget your access codes.

Getting Out:

From Anywhere in the System

First terminate the configuration you are working in, making sure to save any data you want to keep. The ESCAPE Flex-Key will exit the configuration you are working in and take you to the menu from which you entered that configuration. Keep pressing the ESCAPE Flex-Key. It will take you to each successive "previous menu" until you get to the main system menu. Here you will find a choice that says, "Exit to Operating System". Use the arrow keys or press the number corresponding to that choice and press the ENTER key. You are out. Where you find yourself will depend on how your directory system is structured. Usually you will find yourself in the hard disk root directory if the system is configured optimally.

If the squadron has configured the computer to only allow the SIMS on the system, then there will be no way to exit the SIMS short of turning the computer off. If this is the case, when you finish your work, leave the computer terminal at the access menu.

If you do not want to get out completely, all the way to the operating system, you can stop anywhere through the menu system and just leave the SIMS where you want. Each portion of the SIMS is password-protected by individuals who want their configurations to remain exclusive, so there is no problem with leaving the system accessible, unless your squadron sets a different policy in this regard. Always be sure to adhere strictly to the system manager's dictates.

3.4 ENTERING FLIGHT CREWS INTO THE DATA BASE

3.4.1 Introduction

This section will describe how you should enter your flight crews into the SIMS data base. The discussion is primarily targeted to the system manager, or that individual who will be tasked with entering the data into the system for this purpose. We suggest you have one individual do the job, and preferably the system manager. The less number of people you have input data into this particular file the better.

You will want to have all of your pilots into the system as soon as you can to take full advantage of the benefits presented by the SIMS. We will discuss who you should have in the system, and how to put them in. We will go over the Flightcrew Master File in general. The details concerning this configuration are given in Chapter Four.

Getting the flight crews into the database is a very simple procedure. It requires a little time, because you will have to sit down with the individual and enter information accurately. You will need each individual to come up with some information that may take some time to get, such as the total flight time as of the day you enter him, or the expiration date for a particular training qualification. However, the time and accuracy you invest at the beginning of this process will make your database as accurate and efficient as possible. We will suggest some ways to ease this upfront time demand.

3.4.2 Who to Enter

You should give some thought about who to enter into the Flightcrew Master Files. We have included some discussion on this matter as guidance only.

You will most definitely want to enter all those pilots (We will use the word "pilots" in place of "flight crews" from now on in the SIMS 1.00 version) who are attached to the squadron. Without a pilot being entered into the database, you can not enter his name in the Flight Schedule configuration or the Yellow Sheet configuration. He will be effectively cut out of all squadron reporting and flight time tracking. You should enter all your regularly attached pilots.

You will also probably want to enter any other pilot who flys with you, such as the Chief of Staff or the CAG LSO, or the CAG himself. Your database will have plenty of room, and the individual will probably be impressed with the accuracy of the records you can keep for him. If you usually report things by seniority, and want this individual listed last because he is not strictly part of the squadron, give him a lineal number larger than Rocket 99's lineal number and it will solve your problem. (You don't have to go out of your way to mention this to the Chief of Staff, however!)

NOTE: IF YOUR SQUADRON IS NOT RESPONSIBLE TO REPORT AN INDIVIDUAL THAT YOU DESIRE TO PUT IN THE DATABASE, ENTER "NSP" IN THE PILOT CATEGORY WINDOW OF THAT PILOT'S RECORD.

The above note refers to such pilots as the Chief of Staff or the CAG, who will fly with you, but are not counted as pilots attached to the squadron when you report your numbers. By entering the NSP in the category window, the code recognizes that this pilot is not a "counting member" of the squadron, and bypasses his record during the reporting procedures. Although the window only prompts you for items such as "I,II, or III", enter "NSP" for these types of pilots. You would NOT enter "NSP" for someone like the CAG LSO who is designated to fly with your squadron. He counts in your readiness numbers, so enter the appropriate category numeral.

As a rule, you will want to track the flight time and other matters of interest on your own squadron's aircraft. If someone other than a squadron pilot is flying your aircraft, you still need to keep track of that time in your database to provide the most accurate picture of what your squadron is doing.

You also should enter one or two "dummy" names to help you cover the times when a transient pilot flys one of your aircraft to or from a NARF Facility, or in other cases. Use a simple, easily-remembered name, such as "TRANSIENT", or "PILOT1". Use a name that will not appear too ludicrous on the flight schedule, either. You do not want the world to see you have a "DUMMY" coming in from NARF Jacksonville with one of your aircraft.

3.4.3 The Flightcrew Master File

The Flightcrew Master File is a configuration found on Level One of the SIMS, and is the "lowest level" file in the database structure. (See Chapter Two, "System Structures" if you have questions about what that means; you do not need to know right now) It was designed to hold 100 individual pilots and their associated records.

The configuration is divided into two parts. At the top of the first part you will notice the heading, "FLIGHT CREW REFERENCE FILE (PART I). This part of the file holds the pilot's name, his callsign, and all the flight time and trap data. It holds his total time, the time for squadron aircraft, and several other items of concern to the Operations department. PART II holds the information on the pilot's training status. It tells the current state and expiration date of each training category that applies to the squadron aircraft, his current PMA numbers, plus the expiration dates for his standard "background" qualifications. These include his flight physical date, his instrument refresher date, his NATOPS check date, etc.

This master file is updated each time a pilot flys a mission, and his total time, his instrument time, his traps, and other items are kept track of cumulatively. This means that when the yellow sheet configuration enters certain times for instruments, or a certain number of day or night traps, the system adds those from the specific yellow sheet into the pilot's master file totals. When a pilot flys a training mission, he is given credit for that mission and the expiration date for that category of training is updated and sent over to his master file from the flight schedule configuration.

3.4.4 Entering the Information

NOTE: READ THIS ENTIRE SECTION BEFORE ENTERING YOUR PILOTS INTO THE DATABASE. IT WILL SAVE YOU TIME AND IT WILL ENSURE YOU DO IT CORRECTLY.

Entering the information is simple to do, but very important to do properly. The procedures you use to obtain this information are up to you. We will suggest two possible methods to go about gathering and entering the information you need to start up your pilot database. After the second suggested procedure, we will discuss what

to do when you get "a new guy" from the RAG or from another squadron. For best results, read Method One first.

Method One

Make an appointment with the individual to meet with you at the computer. The training officer should be there also. The pilot being entered should bring some information to the meeting. This information includes:

- his flight logbook
- his training jacket
- knowledge of his flight time this month, both day and night.
- knowledge of how many traps he has had this month, both day and night.
- his lineal number

We list these things for you so that you can share this list with the pilot before the meeting, giving him time to gather all this together. You do not want to be running here and there during the meeting looking for various documents. It is inefficient use of your time.

Once you sit down at the meeting, enter the SIMS and bring yourself to the Flightcrew Master File on the Level One menu. Select this option, and the configuration will appear before you on the screen. (Remember that its a good idea to enter all this information in CAPITAL letters. It looks better, and helps with the continuity of the data) Start at the top. The very first window you will see is the individual's callsign. If he has one, go ahead and enter it. If he does not, and you do not want to christen him then and there, leave it blank. This is not essential information. The next two windows are the individual's last and first name. This is essential information. You must be very careful to enter his last name and his first name properly, because throughout his time in the squadron, those who enter data into the system will enter his name using the proper spelling. They can only do this if you have properly entered the correct spelling in this window. Continue through each window down through the configuration. When you get to the fields that request flight time information, do not succumb to the temptation to round off to the nearest hundred hours or so. Be as accurate as possible, using the individual's logbook for the total flight time as closed out last month plus the time flown so far this month to enter for his total flight

time. Do so with the other fields also. As you recall, the numbers you enter here are added to each time the pilot has a flight. For an accurate representation at any time, you should start with accurate numbers.

When you come to PART II of the configuration, you need the training officer to help, using his files to enter the updated information here. He will need to have the pilot's PMA numbers, plus his expiration dates for every category of training. Though this may seem like quite a bit of work up front, he may take consolation in the fact that he will never have to do it again. The pilot can get his expiration dates from his own training record for the NATOPS, flight physical, and other background qualifications. Enter these into the system in their proper windows.

As you go down the list of training categories, you may note some that include training for missions that your aircraft has not yet been cleared to fly. (this will probably occur for the F/A-18 drivers) As an example, as of this writing, the F/A-18 has not yet been cleared to fire rockets. In the training manual, you will note that although this mission is as yet unauthorized, training officers should still count these points into the total for purposes of figuring each pilot's training points. The way you accomplish this in the SIMS is elegantly simple. Just enter a date like...31 December, 1999. When you enter such a date that is far in the future, it assures you that the pilot will receive credit for that category. The reason is that as the Liberty Elite report comes through each pilot's master file, it looks at these expiration dates. If the expiration date is greater (farther in the future) than the report date, that means the pilot has not yet expired in that category, and the program gives him the points for that training mission. When the F/A-18 is cleared to fire rockets (hopefully before 31 December, 1999), go into each pilot's file and alter that particular expiration date in accordance with the start-up procedures used by the training authorities. For example, they announce that every pilot will expire six months from day the aircraft is cleared to fire rockets. Just enter that date in each pilot's "rockets" window when they make the announcement.

If you have difficulty determining the pilot's actual PMA numbers, leave them blank. Fill in all the training category expiration dates accurately, and you can let the system fill in the PMA numbers for you later.

You should complete every window in this second part of the configuration. When you come to the final window,

press the SAVE Flex-Key. On IBM-style keyboards, it will be the F10 key if you have already run the SETSCREEN program. This saves that particular record. If you want to check each category again, go ahead. You have completed one pilot, and may now take the next one. Note the time that it took to enter this first pilot, and plan subsequent appointments accordingly. A good idea might be to input yourself first.

Method two

Method two is suggested for your consideration only because there may be individuals whose duties prohibit taking the 30 minutes or so to sit down with the system manager and enter this information. There are times when this method will have to be employed. You must be the judge.

This method will still require the same information, but you obtain it in a slightly different fashion. Here is how.

First, by yourself go to the Flightcrew Master File configuration. You should be staring at the configuration with no information in the windows. Press the PRINT SCREEN Flex-Key (F4 on IBM-style keyboards) and print out a copy of the "empty" configuration. Then press the page forward key (F8 on IBM-style keyboards) and watch as the configuration steps to the next page. Press the PRINT SCREEN Flex-Key again. In like fashion step through the configuration until you have printed all the pages. Take these pages (it would probably be a good idea to run a few copies of each) and give them to the individual to fill out, or to have filled out. For example, the CO is on leave. Get a printout of the empty configuration and have the training officer fill out the windows for the CO's training expiration dates and the background qualification expiration dates. Have the Admin officer find the CO's lineal number and give you the proper spelling of his name, and get the Ops yeoman to tell you the CO's flight times and total traps to date. Get all this information together and type it into the database while the CO is gone. When he comes back, ask him what models of aircraft he has flown and you are all set.

You must be careful in using this method that the flight time information you get is accurate. If the CO had come back from leave for a day and flown a three-hour flight (an A-7 CO) you would need to account for those three hours. The information you get on the copies of the

empty configuration should be as up-to-date as possible. Do not give these forms to Ensign Schmackeratz to fill out and return in two weeks. He will put down a flight time the first day he gets it, fly for two weeks, and then hand you the form back.

The "New Guy"

When a new pilot joins the squadron, it should actually be easier to add him to the SIMS than the regular pilots because he will be the only one you add, making your task seemingly shorter in time. Basically two types of pilots join the squadron. Those coming from another flying command, or those coming from the RAG. It is strongly recommended that you make the new pilot's entry into the database part of your squadron's check-in procedure.

Those pilots coming from another flying command usually should be entered into your database using method one, mentioned above. He will have his training record handy, and he should be advised to bring those items of information that are listed under the directions for method one. Sit down with him and enter the required information. (If he has a callsign that just doesn't fit, you can erase it later) Make sure you enter his training dates accurately. Usually he will be fairly well up on the PMA numbers. Again, if you and he are not sure of the PMA numbers, leave them blank, and when you run the Liberty Elite report later, the SIMS will fill them in for you.

When you get a new pilot from the RAG, you know in advance what most of his training expiration dates are and his overall PMA numbers. You can find them in the Training and Readiness Manual. (most definitely be suspicious of any nugget coming from the RAG that trys to sell you an established callsign)

If you have the authorization to do so, now is a good time, while you have the pilot there, to enter his name into the system manager's authorization database if he works in the Operations department.

4.0 PUTTING INFORMATION IN: THE CONFIGURATIONS

4.1 Introduction

This chapter will discuss the particular configurations that make up the SIMS. The SIMS is an information management system, and in order for it to manage information, it must have some means of getting it, storing it, and then manipulating it so that it can present you the user with the answers to your questions about the information it has. The tool that the SIMS uses to accomplish all these steps is called a "configuration".

A configuration in our terminology is another word for a custom-tailored database. When we talk about configurations in this manual, we could just as well use the words "tailored database". There are some very minor distinctions from a programmer's point of view, but they are unimportant to the average user. Your reading and comprehension of this manual and its directions will be enhanced if you think of them interchangeably.

The "custom-tailoring" part of a configuration comes into the picture when the system developer must design a database that exactly meets the needs of his customer. For example, nowhere could you find (until now) database software on the market that includes all the categories for the A-7 or F/A-18 training matrix. A database must be specially "configured" to meet this specific need. Hence the term "configuration".

The SIMS consists of a large collection of configurations. Each configuration is custom-tailored to meet the needs of the Operations officer for whom that configuration was designed. There are configurations for the Operations officer, the Training officer, and every other billet that typically has a place in the Operations department of a light attack or strike fighter squadron. The intent of this chapter is to describe each of these configurations.

The description of every configuration in the entire SIMS must be carefully organized to prevent inundating you with excessive detail, yet thorough enough to answer your questions. With those limitations in mind, we have developed an outline within which we will describe the pertinent parts of every configuration in a structured format. The discussion on that format may be found within section 4.2.

The structured format we will use to describe each configuration will be thorough enough for you to grasp the intent and workings of the database design. However, within the format we will not cover each and every data field that the configuration has. This would be too much detail to read through. If you have a desire to see what the configurations will look like on the screen and to note each data window within the configurations, (without seeing them on the computer) copies of the "formation" or "source" code are available from the designers. You will easily recognize the configurations, since they are in plain English, not disguised in computer language. You will note for each that the "screen" portion of the configuration comes first in the description copy, while the coding that actually makes the configuration run follows.

The remainder of this chapter is divided in accordance with the way the SIMS is actually divided in its operation. Following this introduction, you will find a discussion of the format we will use to describe each configuration. The next sections will cover the configurations themselves. Section 4.3 will discuss the Level One configurations, section 4.4 will cover the Level Two configurations, and the Level Three configurations will be discussed in section 4.5. You will note that the system manager's configurations are not covered in this chapter. A discussion of the main security configurations in detail would not be appropriate within the system's general User's Manual. A separate "System Manager's Reference Guide" holds those descriptions.

4.2 Format Structure for Configuration Descriptions

Each configuration will be described in the same format. Not every configuration will have something under every category in the format, but all will be thoroughly discussed. Each category in the format is discussed below. As a general note, under the Header of each configuration you will see a double dotted line. Some configurations have multiple "pages", meaning that the configuration takes up more than the screen height, so you may see more than one screen for only one configuration. You will know that you are at the end of a configuration when you see another double dotted line at the bottom of the data fields.

If the particular configuration only works for a particular SIMS, meaning that it only is designed for A-7 squadrons, or only for F/A-18 squadrons, a note will make that point just after the line introducing the configuration.

Title:

This is the title you see for the configuration when you are operating in the menu system.

Header:

This is the very first line you will see at the top of every configuration. At the far left of most you will note the words, "OPERATIONS DEPARTMENT", to flag the user he is in the Operations department section of the SIMS. At the right will be a descriptive caption for the configuration. Most times this caption will be the same as the title you noted on the menu system, yet some are slightly different. The Header part of the format will only list this caption.

Configuration Purpose:

This portion of the format will succinctly put forth the configuration's purpose within the overall framework of the SIMS. It will tell you the main purpose for which the configuration was designed, and suggest other uses which you may also find helpful if the configuration has other capabilities.

General Description:

This portion of the format will take you through the configuration as you would see it on the screen, noting the particular points which you should be aware of, and discussing in some cases why particular portions of information were placed where you see them as opposed to somewhere else. It will give you instructions on the configuration's use. This part of the outline will not discuss every data field within the configuration. It will give you a complete overview; coupled with the purpose of the configuration, these two parts of the format should enable you to jump right in and start working.

This part of the outline will also tell you how many records the configuration was designed to hold. Should you exceed that number of records, you will not be able to put any more into the configuration until you have either deleted some or "shifted" the complete database. (We will discuss shifting the complete database in Chapter Six)

If you find you need more records in a particular configuration, it is easily done by the developer with his developmental facility.

Indexed Fields:

One of the most important things in any database is the ability to get information out. The SIMS gets its information out of the database at your request by using what are called "indexes". It stores its information according to the way each configuration is "indexed". As an example, take the training records for each pilot held by the Training officer. These are manilla jackets probably kept in a filing cabinet someplace in the squadron. The Training officer also probably has them lined up with the CO's jacket at the front of the file, the XO's jacket next, and Rocket 99's jacket last. In this case, the jackets are indexed by seniority.

With a database, you can index your files by several different categories. Each configuration within the SIMS indexes its information using selected fields. The system developer is the one who establishes the indices for every configuration, and within the SIMS, each configuration has already been indexed. You can not change the indices without consulting a developer. We believe you will find

that there are more than enough indices in the configurations to meet all your information needs.

This part of the format will list the indexed fields within the configuration. It will discuss how they function, and whether or not they are a "multiple index". (more about that later)

Files Opened by the Configuration:

This portion of the format will list the other files that this particular configuration "opens". When a configuration "opens" another file, that means that the coding within the configuration instructs the SIMS to go into another database and bring its .DAT file into RAM memory. This step is like opening the file cabinet that holds all the training records. Then the SIMS will get the information that it needs, and use the information it got from that separate configuration in finalizing its own information processing. For example, the flight schedule configuration "opens" the Flightcrew Master File configuration. It does so because when the user enters a name to fly on the flight schedule, the code checks to make sure the pilot really is in the master files. In order to do that, it must have those master files "open" to look at.

Every file opens its own data files. If the configuration opens no other files, "None" will be entered.

Key Procedures:

This portion of the format will discuss any particular key procedure you may use with the configuration. For some, this section will be empty. For the larger configurations, this section will probably tell you that you can use the F7 and F8 keys to go backward and forward respectively through the pages in the configuration if you have an IBM-style keyboard.

Software Locks:

This portion of the format will tell you if the configuration is protected by any internal software locks. If for a particular reason the configuration is refusing to run, it is probably because of a software lock placed

on the configuration that is closed. Not many have these, but you should know about the ones that do. The discussion will not go into how to break the lock, obviously. The system manager has that knowledge.

Comments in this section do not include the inherent lock put on the configuration by the squadron on startup when they may or may not assign a password to the configuration in the menu system.

Special Considerations:

This portion of the format will discuss any special interest items that pertain to the configuration. These items include special security you may want to consider for the information within the configuration, or ideas on how best to use the information you have within the database. It will also mention the relative importance of the configuration to the overall scheme of information management in the operations department. You should know if the information you have in this configuration can be easily disposed, or whether you should give serious thought before 'housecleaning' your files.

4.3 Level One Configurations

4.3.1 Flightcrew Master File

NOTE: THIS CONFIGURATION IS UNIQUE TO ONE AIRCRAFT VERSION.

Title: Flightcrew Master File

Header: FLIGHT CREW REFERENCE FILE (PARTS I & II)

Configuration Purpose:

To hold all flight time and training information on every flightcrew within the SIMS. It will keep each pilot's flight and training information current up to the day.

General Description:

The configuration is the master file for every flightcrew in the SIMS. A pilot must be entered in this configuration for you to enter him on the flight schedule configuration or the yellow sheet configuration. Both check the Flightcrew Master File to see if the pilot is in the database. If not, you will be unable to use that pilot's name.

This configuration takes information from the flight schedule and the yellow sheet configurations to keep each pilot's flight time and training information current up to his last flight.

The configuration is divided into two parts. The first part handles personal data for the pilot; his call sign, his last name, his first name, his dates of commissioning and designation, and his lineal number, plus some family-related details. It also covers his flight data, aircraft models flown, instrument times and rating, his landing grade and trap information, along with any combat time. The configuration will track combat time if it is so entered on the yellow sheet configuration. SIMS 1.00 will not track the officer's landing grade in this configuration. The LSO has the ability to do that.

The second part of the configuration stores the pilot's current PMA numbers as of the last Liberty Elite report. If you want these numbers to be up to the day, simply have the Ops yeoman run the Liberty Elite report to the screen (to save paper) when he arrives in the morning. This will give you current numbers. The section then goes on to show you the pilot's expiration date in every training category that pertains to his aircraft.

Indexed Fields:

* Last Name
* Lineal Number
* Designator

All are single indexes.

Files Opened by the Configuration: None

Key Procedures:

Use the F7 key to page backward through the configuration, and the F8 key to page forward with an IBM-style keyboard.

Software Locks: None

Special Considerations:

You must ensure that the pilot's names are entered in this file properly. Other files reference this information, and if it is not correct, the pilot will not have records in the database when he spells his name correctly.

When you start this configuration for the first time, you will have to enter each expiration date for every training category. Thereafter the system will keep them updated. Try not to go into the file and alter the dates yourself. The system integrity is only as solid as you keep it.

This file holds very important information. It keeps all the pilot's flight time totals, found nowhere else in the system. It would be a good idea every once in a while

to call up each pilot's record in this configuration and press the PRINT SCREEN Flex-Key, outputting the record on hard copy. This way you could always have a backup reference point without backing up the whole system.

Keep this file secure with a password. Make judicious use of the password. Do not give it out to just anyone.

This file is very handy for a number of things. If you want to see who has the most flight time, use the Query utility and report on the Total flight time fields. It will show you who has the most, and who has the least. The Query utility can go in and extract any information you desire in your selected format.

This file has a capacity of 100 records. This means that you can enter a total of 100 individuals.

4.3.2 Yellow Sheet Configuration

NOTE: THIS CONFIGURATION IS UNIQUE TO ONE AIRCRAFT VERSION.

Title: Yellow Sheets

Header: YELLOW SHEET ENTRY

Configuration Purpose:

Yellow sheet entries. This configuration provides the Ops yeoman an automated method to enter and store the squadron's yellow sheets.

General Description:

The yeoman uses this configuration to enter the "Yellow sheets". This configuration stores the information and additionally takes the entered information and sends it to the appropriate master file for the pilot whose name is entered on the first page of the configuration.

The first part of the configuration asks for the date, the Bureau Number, and the modex. It asks for the pilot's last and first name, the FPC, and the pilot's Rocket number. It then goes on to take all the flight time information that is now on the line underneath the pilot's name on the actual form now in use.

The next part of the configuration takes the landing and approach information. THe format was designed to be excessively simple to use. The yeoman checks to see which landing or approach code was entered by the pilot. He matches this with what he sees on the screen, and enters the appropriate total number of landings or approaches in the adjacent window. The system will only allow two-digit numbers, so if you have a pilot who gets over 99 traps in one flight, use another yellow sheet.

This configuration has a capacity of 7300 records. This means that you can maintain up to 7300 yellow sheets in the system at one time. This lets 20 pilots fly once a day for 365 days. If you are running out of space after a few months, first make sure your squadron is following its backup strategy, then check to see how far back the latest backup occured. Delete some of the oldest yellow sheets in your configuration. Do not delete those which are later

than the latest backup date, obviously. This is really not a problem. You may have to delete yellow sheets for flights last January when the last backup occured the first day this January. The system lets you hold many yellow sheets for a long time.

Indexed Fields:

* Date
* Bureau Number
* Flight crew Name [Last]
* Flight purpose code
* Lineal Number

All are single indexes.

Files Opened by the Configuration:

* System Daily File
* Flightcrew Master File

Key Procedures:

Use the F7 key to page backward, or the F8 key to page forward through the configuration, on IBM-Style keyboards.

Software Locks:

If the name entered by the yeoman does not match a name in the Flightcrew Master File, the configuration will stop him and ask him to enter a valid record I.D. He will be unable to proceed unless he spells the name properly.

If he enters a name incorrectly, he should press the CLEAR Flex-Key, find the correct spelling of the name, and re-enter it.

Special Considerations:

You should maintain fairly good security on this configuration. The yeoman will obviously have an interest in retaining the integrity of the database, since its proper function will make his job significantly less demanding. The yeoman should keep the completed yellow sheets and every once in a while select a date and match the completed yellow sheets with the record in the database for that date.

4.3.3 Quarterly Date Information

Title: Quarterly Date Information

Header: QUARTERLY DATA FORM

Configuration Purpose:

To maintain the proper calendar dates of each fiscal quarter through the entire year for purposes of OPTAR tracking.

General Description:

This is a small configuration designed to let you input the beginning and ending dates of each month for each fiscal quarter through the year. You should come to this configuration when you start the system, and at the beginning of ever year. Have a current calendar handy when you enter the dates. This configuration is accessed by others that manage OPTAR reporting based on the dates you input here.

This configuration was included so that a more intricate "calendaring" function would not be a system requirement.

The configuration asks you for the quarter, then the beginning and ending dates of the months in that quarter. There is only room for four records in this configuration, since there will only be four fiscal quarters in any given year.

Indexed Fields:

* Quarter

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

The accuracy of your OPTAR tracking data depends on the accuracy of these dates. The system will want to know how many days left in the quarter for flight time and hour calculations. It will use the dates input in this configuration. To get accurate results simply requires you to go fairly slowly and check your work once you have completed the entries. Do it right once a year, and you do not have to think about this configuration again until the next year.

4.4 Level Two Configurations

4.4.1 Operations Department Mailbox

Title: Operations Department Mailbox

Header: OPERATIONS DEPARTMENT MAILBOX

Configuration Purpose:

To provide a centralized location for all operations officers to receive and generate messages.

General Description:

This configuration provides the squadron Operations department with "electronic mail" capability. Its format is of the standard Navy type, with the "From", "To", "Subject", and "Date" categories as usual. One officer may leave a message for another, or pick up his own messages simply by typing in his name in the "To" field and pressing the FIND Flex-Key.

This configuration has the capability to handle 100 records. This means that you can have 100 messages at one time in this configuration. It is suggested that once you read a message (addressed to you) and have no further need for its contents, you delete it with the DELETE RECORD Flex-Key.

Indexed Fields:

* Date
* To

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Because of its nature, this configuration will be accessible to a large number of people. Consequently, it is advisable not to enter messages of an extremely confidential nature. Keep it professional, and use the configuration for its intended purpose.

Use this configuration to leave messages for an officer who may come into the squadron early after you have left late. Squadron SOP could mention the requirement to check this configuration for any messages as a part of the daily routine.

Another application could have one individual assigned to screen the real message board (the one the CO always has when you want to read it) in the morning and enter "tickler" notes in this message configuration. With action completed, the officer responsible could delete the record.

Use this configuration as best serves your purposes.

4.4.2 The Snivel Log

Title: Snivel Log

Header: THE SNIVEL LOG

Configuration Purpose:

To maintain an accurate record of snivels in three categories; daily, weekly, or a specified period, such as a leave period.

General Description:

This configuration is designed to replace the little green book that probably now resides on the schedules officers' desk. You can never find it if the Schedules officer is not around, and sometimes the information entered is not what is needed. This configuration eliminates these headaches.

The configuration is broken into three basic categories. The first is the general snivel, for snivels that will take a day or less. This is the type of snivel you will probably use most often. The next is for weekly snivels; use this category for department head meetings and other squadron functions that take place on a weekly basis. The last is the period category, used for items such as leave periods or schools that will impact the officers scheduling over a period of time, greater than a day.

Enter only one type of snivel per record. For example, let us say that you need to enter a general snivel. You come to the configuration, and first check to see other snivels around that time. While you have a record of an old weekly snivel on the screen, you notice that the general snivel windows are empty. Do not enter your general snivel in those empty windows. It will not harm the integrity of the data but it will make things confusing when the scheduler goes to search for the information within the configuration. Enter your snivel in a screen that has all "empty" windows.

The question naturally comes up as to whether or not the system will take these snivels and advise the schedule writer, when he is writing the schedule, that the proposed pilot has a snivel at that time. At the present time the coding required for this type of application would demand

more of the user than the benefit this capability would provide. Subsequent versions of the SIMS may incorporate this feature in a re-structured file system.

This configuration has the capability to store 100 records. If you keep to one snivel per record, that means 100 snivels. If you "pack them" (put more than one snivel on a record), you could store 300 snivels, with a maximum of 100 per category.

Indexed Fields:

This configuration has multiple indexes. This means that when you place the cursor in a window, it will check other windows also before displaying the record you ask for. For example, let us say you have a number of period snivels in the database. Each period snivel begins on a date and ends on a date. If you place the cursor in the "Begin Date" window and press the FIND Flex-Key, the system will show you the period snivel that begins at the earliest date, and ends on the earliest date. Pressing the NEXT RECORD Flex-Key will then show you any snivels that begin on that same date, but end on a later date. If there are a number of period snivels that begin and end on the same date, such as a group of officers going to same three-day school, the system will then index them by name, alphabetically.

The asterisked windows in this configuration are listed below.

Under General Snivels

* Date of Snivel
* Name

Under Weekly Snivels

* Day of Snivel
* Name (or group)

Under Period Snivels

* Begin date
* End Date
* Name

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

It is suggested that you enter only one snivel per record. Doing otherwise will increase the number of snivels you can store but make the data you get when searching through the file a little bit more confusing to a novice user. If you feel that you can keep the categories straight, there is nothing in the code to prohibit you "packing the snivels" in this fashion.

4.4.3 The Officer's Board

Title: The Officer's Board

Header: THE OFFICER'S BOARD

Configuration Purpose:

To provide a central "electronic bulletin board" for announcements or committments germane to the officers in the operations department.

General Description:

This configuration, just like the mailbox configuration, will function optimally when the squadron obtains a number of terminals, making a network of the SIMS. For now, this configuration can be used to notify officers of general events such as squadron parties, lectures, AOM/APM (real marathons). There is a flag provided to note events that will impact squadron operations. Use the Query utility to extract these notices.

This configuration has the capability to store 300 records. This means that you can store 300 different events.

Indexed Fields:

* Event Date
* Event
* Begin Time

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

The flag that notes which events are of operational concern is the window that asks if you want the event to

appear on the Greaseboard report. Enter a yes if you want this report flagged. The ops yeoman will use the Query utility to list the flagged events and include them with the other reports that make up the complete Greaseboard report.

Use this configuration to schedule Zone or Barracks inspections, notify the officers of social events, or even advise about Quiet times and flag this note to the Greaseboard report. This configuration could also be on the list for each officer to check at the beginning of the day.

Make sure that the individual who placed the event into the database deletes that record when the event is completed.

4.4.4 Operations Inspection Discrepancies

Title: Ops Inspection Discrepancies

Header: INSPECTION DISCREPANCIES

Configuration Purpose:

To maintain a list of inspection discrepancies as required by current Administrative directives to help the operations department track those discrepancies that have been fixed, and to note those that have yet to taken care of.

General Description:

The use of this configuration is strictly up to the individual operations officers. The configuration will store discrepancies, noting which inspection they came from, the date of that inspection, whether action is required or not and if the action has been taken, the type of action taken and the date. It also notes a point of contact for the particular discrepancy.

Reasons to use this configuration include the requirement to have a list of "last year's inspection discrepancies" on file. They are right there where you can have them at a glance, and you can sort them by the ones that need action and the ones that have been rectified. It helps to organize your discrepancies, and assist your efforts to eliminate them. This configuration will eliminate the frantic hunt three weeks before the ADMAT to find last year's ADMAT discrepancies. Or last year's CTPI discrepancies. Or last year's NWTPI discrepancies.

Reasons not to use this configuration could best be summarized by asking the question, "who wants to hang out dirty laundry?" Though the configuration will be password protected, the CO has all the passwords. We mention this only to give you pause and think.

This apparent two-edged sword really is not that at all. The configuration should not present a problem. No department is perfect, and efforts taken to organize and eliminate the inevitable discrepancies are more noteworthy than efforts to cover them up.

This configuration has the capability to store 100 records. This means that you have incentive to keep the

number of discrepancies under that number. You can not store any more.

Indexed Fields:

* Inspection Type
* Is Action Required
* Has the Discrepancy been rectified

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Use this configuration as best suits your purposes. The information is important as this is the file for all your inspection discrepancies. Your squadron's backup strategy should cover all the data protection you will need for these records.

Once a discrepancy has been rectified, it is NOT advisable to delete the record. Remember what you are storing these record for; you want a list of discrepancies that pertain to individual inspections when those inspectors come around again. If the discrepancy has been fixed (which by the time of the next inspection should be the case for them all, right?) you do not want to eliminate the record of that fix. Only delete these records at the end of an inspection, once the inspectors have replaced the "old" inspection discrepancies with new ones for you to keep for another year. For example, at the end of the CTPI, go to the Inspection type window, type in "CTPI", and press the FIND Flex-Key. The SIMS will respond with the first CTPI discrepancy entered. This will be from an inspection now a year and one day old. You may safely delete this old record since the inspectors have already seen your stellar documentation effort.

4.4.5 Ops/Training Interchange

Title: Ops/Training Interchange

Header: OPS/ TRAINING INTERCHANGE

Configuration Purpose:

To provide a platform for the operations and training officer to exchange required topics to be included on the upcoming AOM/APM, or suggestions and requirements about items of a different nature.

General Description:

This configuration was designed to help the Operations officer track and pass on his requirements to the training officer about what he wants covered at the next AOM/APM. The Operations officer can call up this configuration at any time and log up to six items for the upcoming AOM/APM. It also permits the Ops officer to specify a specific theme for the overall training at the AOM/APM, such as "Back in the Saddle" after returning from leave, or "Hitting the Boat" for an APM prior to shipboard ops. It also lets the Operations officer make recommendations to the Training officer about items not related to the AOM/APM. He could note a requirement to have the Training officer review all the old "boat" lectures and pick the best, or tell him to get a new boat lecture because all the old ones put the squadron to sleep.

On the other side of this configuration, the Training officer can go into the database and get a clear picture of what the Operations officer wants covered for the next AOM/APM. (This discussion assumes the Training officer is responsible for scheduling training during AOM/APM's. They usually are.) He can also note special requirements from the Ops officer for his attention. He can also include suggestions in these windows for the Operations officer's consideration.

The last benefit provided by this configuration is that it provides documentation for all the scheduled training. You could include a little notation, such as a "C", or a "F" to the right of a completed item to note that the training item was completed. Leave the record in

the data base and you will have an impressive documentation effort for all your AOM/APM's.

This configuration has the capability to hold 52 records. This obviously with the expectation of one AOM/APM per week. Sometimes there will be more, sometimes less. Your squadron backup strategy will always maintain your old records if the inspectors happen to miss a year, or if your squadron likes to have lots of AOM/APM's. Keep in mind that if all you put in a record is a suggestion/recommendation on the bottom windows, that takes up a record also. (see Chapter One for a definition of "record" to help explain this note)

Indexed Fields:

* AOM/APM Date
* Item/Topic
* Action/Info
* Date Action Req'd
* Code

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

There is one field, the last window named "Code". that was included to provide the Operations officer and the Training officer the ability to assign a priority to the interchange messages based on a mutually agreed upon coding system. They could select "A" as a high priority, or "1", or whatever they choose. This field can be used in any way the two officers feel benefits their administrative efforts the most. The configuration is also indexed by this category, so if they did use this field, they have the option to sort and find their interchanges according to a mutually agreeable index. Keep in mind that the field accepts alphanumeric characters; this means that if you use letters for your code, the indexing system will make the "A" record come before the "Z" record. If you use

a numbering system, the "1" record will come before the "8" record.

The very first window in the configuration asks you for today's date. It wants to keep track of the time you made these requirements. This window does not want you to input the date of the AOM/APM. The next window is for that purpose.

4.4.6 The SDO Roster

Title: SDO List

Header: SDO ROSTER

Configuration Purpose:

To maintain a list of the SDO's for the month and to keep an accounting of the points assigned for the day on which the individual is assigned the SDO.

General Description:

This configuration is a very simple database that will provide the senior watch officer with some surprisingly powerful paperwork elimination features.

It is designed to be used by the SDO. He types in the date and the rank and name of the individual assigned as SDO for that date. The third window asks for the points. Use this window if it fits with your squadron's method of tracking SDO credits. It was included to accomodate the many squadrons that use a point system, assigning more points to the weekends and holidays than the weekdays. It is of course up to the senior watch officer to determine who gets to sign up when for the respective days. The SIMS leaves such questions to the squadrons. This configuration functions almost like the finished watch bill. The SWO will type in the names once he determines who will have the watch on what day; then he goes to the Query utility and prints out the finished watch bill for the month to post. Next to each date will be the name of the officer and the points he will get for that day. With a little practice, the SWO can, at the end of the month, use the Query utility to print out each officer's total points for the month.

The individual watchstanders do not need to wait for the watch bill to come out on paper, either. They simply enter their name in the "Name" window, press the FIND Flex-Key first followed by the NEXT RECORD key, and the SIMS will show them the dates on which they have the duty, and the points they get for those dates. The can go into the Query utility themselves and tally their own points.

If an "unrelieved" SDO wants to find out who has the duty on the day after he himself was scheduled, he simply types in the date for the new day, and presses the FIND

Flex-Key. The record will come up and show him who has the duty that day.

Indexed Fields:

* Date
* Name

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

There are times when two officers need to stand the duty on the same day. Enter this information in the "SDO REMARKS" window. For example, let us say Lt. Knight must be relieved by Lt. Nutter because Lt. Knight has to be out at the end of the runway to wave at 2200. Make the following entry; "KNIGHT/NUTTER 2200". You can then type Knight's name for that date into the Name window, and assign him the points for that day. Press the SAVE RECORD Flex-Key. Now type in the same date, and type in Nutter's name and give him whatever number of points he gets for coming at at 2200 to wait for someone to crash at the end of the runway.

4.4.7 Operations Phone Directory

Title: Ops Department Phone Directory

Header: OPERATIONS PHONE DIRECTORY

Configuration Purpose:

To provide the Operations officers a ready reference to numbers that they use continuosly in the performance of their duties.

General Description:

This configuration, like several others at this level, will function best when the squadron gets multiple terminals and/or a network. As for now, the configuration will function quite well, and provide the Operations officers with a good tool to help them do their jobs.

This configuration was designed to remove the handicap that a new officer has when he comes into the squadron and does not have an impressive "Rolodex" for all those important phone numbers that the officer he's replacing is taking with him to his next job. This configuration puts all the critical numbers the Operations department depends on at your fingertips. Over the course of a year a squadron Operations department can build up an impressive, better-indexed phone directory than the standard base directory. Does your base directory have the numbers to the adversary squadrons at Luke AFB? This configuration was designed to provide you to instant access to those kinds of numbers.

The configuration is indexed according to the name or letter, obviously, but it is also indexed by the command to which the number belongs, allowing you to categorize your numbers based on the function they serve. All the numbers for China Lake can be accessed, or the number for the LSO wheels at NAS Cecil.

The configuration has the capability to store 300 records. That means 300 phone numbers. Not many compared to the base directory, but you do not need the number to the beauty shop.

Indexed Fields:

* Key Name or Letter
* Complete Name
* Command/Organization

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

As this file is open to all the officers in the Operations department, it would not be wise to make this configuration your electronic "little black book". Make it your rolodex.

4.4.8 The Flight Schedule

NOTE: THIS CONFIGURATION IS UNIQUE TO ONE AIRCRAFT VERSION.

Title: The Flight Schedule

Header : (A-7) CORSAIR II FLIGHT SCHEDULE
COMPLETED FLIGHT SCHEDULE
(F/A- 18) HORNET FLIGHT SCHEDULE
COMPLETED FLIGHT SCHEDULE

Configuration Purpose:

To provide the the means to automate the generation, employment, and storage of the flight schedule.

General Description:

[Due to the length of this configuration and the detail involved, the general description category will be subdivided to make it easier on you as you read through.]

Introduction

This is the heart of the SIMS, just as the flight schedule is the heart of any Operations department. It was designed to be used by the same people who now use the written flight schedule; the schedule writer who composes it, the Ops officer, who checks it for completeness and to see if it meets the operational requirements for the next day, the CO who checks it to square with his special requirements, and the SDO who actually manipulates and edits it throughout the course of the flying day. And the Ops yeoman who must store each of the completed schedules, drawing information from various categories to put out the Operations reports he must.

Overview

The configuration works in exactly the same way that the flight schedule works. The flight schedule's progress is as follows; first you make a flight schedule for the day, various people check it, then you fly during the day and the SDO edits the flight schedule as the day goes on,

then you make up the completed flight schedule and pull information from particular categories for a report of some type, then you store the completed flight schedule. This configuration works the same way. The configuration's progress is as follows; first you make up the flight schedule event by event, then various people check it for accuracy and completeness, (only now they can make instant corrections on the screen instead of having to re-print the whole thing) then the SDO edits the configuration as the flying day proceeds (changing the modex on event 4 from 302 to 307 and putting Schmackeratz in for Wollinsky) and records the finished flight times and training (the training part may or may not get recorded in your squadron) for each event as they come in. The configuration takes the completed training for each pilot and updates his expiration dates in his particular master file, keeping his Liberty Elite data current. Then the system automatically generates a report that will tell you at the end of the day your sorties scheduled, your sorties completed, and the completion percentage. It then stores away that day's flight schedule, ready to be called up again with the touch of a key in nine months when the Wing staff wants to know who flew modex 408 on the 16th of February, 1985, at 0900 through Yosemite National Park. (a convenient time for a data dump).

OPTAR data comes from this configuration. The SDO logs whether each flight was an ACM hop, a TACTICAL hop, or one of several other categories. These categories are the ones used typically to break down the cost-per-flight hour statistics. As the SDO enters a category for each flight, the OPTAR reports can draw from the record the amount of flight time spent for each category, and show the Operations department where it is spending most of its money.

Operation: Schedules Officer

The configuration starts with header information, so called because that is what most flight schedules start with. It will ask the schedule writer to enter the date, the sunrise, sunset, and Julian dates which apply to the day for which the schedule is being written. The system will not automatically fill this information in because sometimes schedule writers write the schedule for a few days in advance. It will ask the writer if this day is a "no-fly" day; if so the writer simply enters an X, presses

the SAVE RECORD key, and starts over again at the beginning with the next day's date.

The configuration then steps down to the event information. As a schedule writer, you should know that the system will expect you to enter all the event information for ONLY ONE pilot. In this portion of the configuration, you enter the event number, the APC number, the number and type of aircraft,, the true airspeed and Flight level altitude. You will enter the times for the event; briefing, launch, and recovery, the time enroute, the Pop-up time and the Time on Target. Make sure you enter the enroute time, the Pop-up time, and the TOT in the format described on the screen. If your time enroute will be 2+00, enter it as 2.0. If your TOT will occur at 1+45, enter it as 1.75. (three-quarters of an hour) You will enter the route, the mission, and the FPC. Leave the Modex blank, as the SDO will enter that for each individual pilot when maintenance assigns them. Now enter the name of the pilot who will fly the event. Preferably enter the flight lead of a particular event first.

The next window is the "Crew" window. You may use this window as your squadron desires. If your squadron has a tactical organization, you could specify to which "crew" this pilot belongs, giving you the ability to see how your tactical organization is functioning. You could enter the fact that the pilot you are entering will have the lead for this flight event. You could leave it blank. Up to you.

Then you come to the Fuel window. Enter the Fuel assigned for the mission, just as you do now on the regular flight schedule. Enter it in thousands of pounds, as "12.2", or "8.0". The window will hold numbers up to 9999.9. If you have a mission that requires more fuel than 99,999,000 pounds, you are a patrol pilot, and should not be using this version of the SIMS. If the pilot whose name is the current one in the names windows is a crewmember in the back seat, do not enter any fuel. They will only be flying one airplane; you only need to account for the fuel in that aircraft once.

The next window is the Return State. Leave this blank, as the SDO will fill this in when the pilot has completed the flight.

The next few windows are for tanking operations, and will be very handy to have at the end of the day aboard ship when the CAG staff wants to know how much fuel you gave away, how much you took, etc. The Total Give window will be filled in by the SDO as the returning A-7 tanker pilot comes back. F/A-18 pilots, take a break on this

window. Make it up on the next one. The next window is the Total Received window. You the schedule writer will obviously leave this blank; the SDO will fill this in when the flightcrew returns. Also leave the Total Used window blank. The SDO will do some fancy arithmetic and fill this window in. The Received From and Remarks window will also be filled in by the SDO. This Remarks window is for remarks concerning the tanker package or other fuel-related items. (like, "Package Down")

The next windows are for Liberty Elite numbers. These windows are ADVISORY in nature only. They are for you the schedule writer to put down the number that corresponds to the training matrix number you want this pilot to complete during this event. There is room for six. If you have more, write the pilot a note in the mission notes section later on. The numbers that you enter in these windows will be carried forward to the page that shows the Liberty Elite categories, to let the SDO and the pilot know what training he should have accomplished and where to put the X's if he did so. Once you go through the configuration, you will see why they are where they are and how they aid you and the SDO.

You now come to the ordnance and mission notes for the event. We stress that these are notes for the single particular pilot you are entering. Enter the amount and type of ordnance you want the pilot to carry on the event. If you want the pilot to have 1000 rounds of 20MM, enter the amount as 1000, and the type as 20MM. Enter "internal" in the Specified Stations window. Then enter the amount and types of external stores for the pilot in the same fashion. Keep the ordnance separated from the external stores. You rarely have a need to document how many times you carry a drop tank, and mixing the two will confuse the ordnance documention. You have space to enter three types of ordnance per pilot per mission, and three types of external stores. Very rarely will you carry more than three different types of ordnance. If you do, make a note in the Notes windows, below the Ordnance and External Stores windows.

The next windows are the Scheduled Times and Sorties for the pilot whose name is currently in the names window. Enter the scheduled time for his day or night flight in the Hours Scheduled windows. The system will automatically total them and enter that number into the Total window. Then you must leave the "Flown" windows blank, because the SDO will be the one to fill those in. You are just writing the schedule now. Then enter the number of sorties for this pilot, NOT for the total event. Most of the time this

number will be one (1), either a day sortie or a night sortie. (you decide which) Every once in while you will enter a cross-country as more than one scheduled sortie, but regular missions that you usually fly are most often only one sortie. Again, if the EVENT has four aircraft, do NOT enter "4" in the Sorties Scheduled window. The system only wants to know the sorties scheduled for the pilot in question. Enter that in the apporiate windows, and the system will total them in the Total window. Again, skip the Sorties Flown windows, as the SDO will enter that information.

Now press the SAVE RECORD Flex-Key. That portion of the event is saved. To enter the next pilot, start at the beginning of the configuration again. (When you SAVE a record, the system takes you back to the beginning automatically) You will now notice that most of the windows are still filled in with the information for the last event. This is because usually two or more pilots go on an event, and all the information is the same in the event with the exception of the pilot's name. The system has an option to permit the data in all these other windows to be "retained", which helps you since you do not have to type all the same information over again four times for a four-plane event. All you must do if you are entering a second or subsequent pilot on the same event is to bring the cursor all the way down to the Names windows and enter his name. You should check to make sure that the fuel window remains the same; if this next pilot is a backseater, the fuel you enter would be 0. Also enter the new pilot's ordnance; the ordnance lines are not retained, because many times pilots do not go out with the same ordnance load on one event. Proceed through the windows just as in the above description, noting the Liberty Elite #'s windows; if this is a different pilot, he may need some different training than the first pilot on this event.

When you change events, you of course do not want all the first event information up on the screen. Getting rid of that is easy. Just press the CLEAR Flex-Key twice. This clears all the windows, even the ones with the "retaining" feature.

Go through all your events, pilot by pilot, until you have completed the schedule. Once you finish, to check your work go back to the very first window, the Date window, and type in the day's date and press the FIND Flex-Key. This just finds the records in the database that start with that date you typed in, which should be all the events for the day's flight schedule. Using the NEXT

RECORD Flex-Key, go through all your events. The records are indexed by date and event number, so you will see the lowest-numbered event for your selected date first. Go through each event by using the NEXT RECORD Flex-Key. When you have checked each pilot's record in the schedule for the day, you should put your initials in the Submitted window. If you want to view a previous record, use the PREVIOUS RECORD Flex-Key. Make any corrections you want, making sure to save the corrected record with the SAVE RECORD Flex-Key. When you are all through, make sure the record for the last pilot on the last event has been saved, press the ESCAPE Flex-Key, and you are finished.

This may seem to be a lengthy process. It appears that way now because this may be the first time your are reading these instructions. If so, then you should proceed slowly, until you feel comfortable with the way the system takes in information. This familiarization process should take you about 30 minutes to an hour. After that, you will be able to whip through the configuration like you wrote it, able to enter an entire flight schedule much faster than the yeoman could type it.

This is the place the schedule writer would normally stop. The schedule writer creates the "proposed" flight schedule. It must be reviewed by others before being accepted, and the next section is addressed to those who will review the flight schedule in its rough form.

Operation: Reviewers

The reviewing process for the flight schedule is very simple, and will be even simpler when the squadrons obtain multiple terminals.

The reviewing process assumes the Operations officer and the Commanding officer want to look at the schedule before it is printed. In the SIMS's case, the Operations officer and the Commanding officer will want to approve each event, pilot by pilot on the screen before the SDO will use the rough to work during the flying day.

This screen schedule is not intended to replace your printed schedule in the squadron. Use that schedule or the output from the Flight Schedule report for the review process if it is more convenient. The authorization windows in this configuration have been designed for those who will use the system on a network, or for the Operations or Commanding officer who will have a terminal on his desk and wants to review the flight schedule using

his own terminal instead of the printed page. Use them as they best serve your needs.

To review the flight schedule, you simply place the cursor in the date window, type in the date of the day for which you are reviewing the flight schedule, and press the FIND Flex-Key. The first event for that day will come up on the screen. You can move the cursor to make any changes you see fit, and use the page forward and page backward keys to go to other pages. When you have finished with your review, and find that record acceptable, enter your initials at the bottom in the appropriate window provided. This entry for this particular record will let the SDO know that the record has been approved and that he may use it during the fly day to complete the flight schedule. If you have made any changes to the record, remember you must press the SAVE RECORD key to have those changes entered. To go to the next record (which will be the next pilot) press the NEXT RECORD Flex-Key while the cursor is in the Date or Event window on the first page of the configuration. This will step you forward in the database to the next pilot or event.

Operation: SDO

As the SDO, you have the responsibility to ensure the completed smooth flight schedule is filled out in the proper fashion, the flights go according to schedule as much as circumstances will allow, and the proper reports at the end of the day that make use of the day's flight information are completed. This configuration will help you do all three.

First, if you would like a tool to help you visualize the whole schedule on one piece of paper, you can do one of two things. Either go to the reports section of the SIMS and put out the Flight Schedule report, which condenses the schedule for the day to one "picture", much the same way the present flight schedule appears now, or use the Query utility to put out only the information you want to see concerning the flights for the day. This tool that you set up at the beginning of the flying day will help you get an overall perspective that you will need to be able to make substitutions for pilots, etc. Also keep in mind that you as the SDO have access to other configurations that come with the SIMS, many of which can help you with your job as the Duty Officer.

When you have the Duty, you must maintain the flight schedule configuration. This maintenance is very easy; you

simply question the pilots as they return from the flight with the information in front of you, enter their answers, save the record, and you are done. Let us walk through the configuration to see the windows where you need to enter information.

To start the flying day, you should call up the configuration by selecting it from the menu system, place the cursor in the Date window, (it will be there when you start) type in the current date and press the FIND Flex-Key. The first event, with the first pilot for the event, will come up on the screen. Look through the pilots and events scheduled using the NEXT and PREVIOUS RECORD Flex-Keys. This will show you the entire flight schedule for the day. (If you go backwards, make sure you do not go back to yesterday's schedule.)

Now that you have an idea of the layout for the day's schedule, wait for the first event.

Check to make sure you have the proper event, and make sure the event went with the scheduled number of aircraft. If it did not, just change the window to show how many aircraft it did go with. You can change the launch and recovery times to reflect actual occurrence. Change the modex anytime if maintenance calls up and changes it for you. If the pilot changes for the event, change the pilot's names to the new flyer. The general rule to follow here is this: IF THERE IS A CHANGE TO ANY OF THE WINDOWS MADE BECAUSE OF DOWN AIRCRAFT, OR A DIFFERENT PILOT, OR A CHANGED FUEL LOAD, OR ANYTHING ELSE, YOU CAN CHANGE THE RESPECTIVE WINDOW ANYTIME YOU WANT, AS SOON AS YOU ARE INFORMED OF THE CHANGE, BY JUST TYPING IN THE NEW INFORMATION, THEN PRESSING THE SAVE RECORD FLEX-KEY.

As the event walks, you should pretty much have the information in the system the way the event will actually fly. If someone goes down in the line, just change the Modex if they give him a new aircraft. If they do not give him a new aircraft and he does not make the event, do NOT delete his scheduled record. The flight was scheduled, and the system must report it as such. You would simply enter 0 for the Hours Flown, and 0 for the Sorties Flown.

When the event returns, you must take down important information. Starting from the top of the configuration down, we will go through what you need to enter when a pilot returns from a hop.

1) Call up the pilot's record for that day, for that event. Check to make sure his mission did not change. If it did, enter the new one in place of the scheduled one.

2) Move down to the Return State window. Enter his return state, any fuel given, and any received. The system will take the fuel he started with, add any he received, and subtract his return state plus any he gave away to put the total used in the right window.

3) Ask the pilot who he received fuel from; usually this will be a squadron. Then enter any remarks he may have that pertain to tanking or fuel procedures.

4) Get the pilot's flight time and enter it in the Hours Flown window, putting the day hours in the day part, and the night hours in the night part. The system will total them up. Then enter the pilot's completed sortie information the same way.

5) Continue on to the Liberty Elite matrix. You will see displayed for you the Liberty Elite numbers for the training the schedulers wanted this pilot to complete. These are there for reminders only. Ask the pilot which training he accomplished, and place an X in the appropriate box. Do not go too fast through this section. You do not want to put an X in the wrong training category. It is fixable, but you probably do not want to take the time.

6) Ask the pilot for his ordnance expended, and enter the information in the appropriate windows. Enter the "primary" type of ordnance in the first window. As you see, it is indexed, so the squadron can make good use of this window. The "primary" type of ordnance is just the type of ordnance you think the squadron would want to have indexed. For example, if a pilot dropped 6 MK 76's and a WALLEYE, put the WALLEYE in the first set of windows. It is not important as far as accuracy of data goes, but helps when looking for people who have not dropped exotic ordnance for a while. Ask the pilot if he had any hung or unexpended ordnance, and enter that information in the windows provided. Then take any remarks he may have on the ordnance or ordnance procedures.

7) Enter the FPT, the CPT, the SPC time, and the NIGHT time in the next windows. This may seem redundant to you, but there are reasons for this information being entered in two places. It will help you and the SIMS both.

8) Now enter the item for OPTAR tracking. The system will not let you go away without entering something here, because it is an important piece of information. Every flight can be categorized in one of the five categories you see there on the screen; either ACM, TACTICAL, XC, OTHER, OR SHIP. When you categorize the pilot's record with one of these labels, it helps the OPTAR system track overall CPFH/CPS. As the instructions on the screen mention, if this is a backseater, just enter "NONE". Whenever you are on the ship, enter SHIP for the category no matter what you do. (The squadron can change this policy if it so desires; these categories are strictly advisory)

9) Then enter the item for Flight Hour tracking. This is used in the Monthly Training and Readiness Report to keep track of how the squadron is apportioning its flight time. The system will require you to enter something here also. Again, if the pilot is a backseater for this record, enter "NONE".

10) The last item you must check is whether or not the entries you are making are in a record that has already been saved in the smooth before. You, in going through all the above 9 items, have been making the "smooth" flight schedule. If you are doing it for the first time in a particular pilot's record of a flight event that day, you would leave this window with the "N" in it alone. If for some reason the pilot came back to you three hours from now and told you that he gave you the wrong first pilot time, or the wrong something else, you would go back and correct the respective entries, and then come down to this last window and enter a "Y". The SIMS uses this last window to advise the ordnance tracking system not to enter another batch of ordnance in the ordnance tracking file.

Now press the SAVE RECORD Flex-Key, and the record is in its smooth form.

Once you have checked the above items for each event as it returns and saved the last one, you have completed the smooth flight schedule. You can then run the Flight Schedule report to get the sortie completion percentages,

or the Query utility to find out whatever you are interested in concerning the day's events.

After a few times practicing with the configuration, you will find it much easier to use and very much more convenient than running the day's flight events with the flight schedule now on paper.

Indexed Fields:

* Date
* Event
* Mission
* FPC
* Type and Target in first set of Ordnance windows.

Date and Event are multiple indices; the rest are single.

Files Opened by the Configuration:

* The Flightcrew Master File
* The System Daily File

Key Procedures:

Use the F7 and F8 keys to go back and forth through the configuration on IBM-style keyboards.

Software Locks:

This configuration has a lock that will not permit operation unless a certain key is inserted elsewhere in the SIMS. If the configuration comes up and tells you to see the system manager, that key is not inserted and the configuration will not run without it.

Special Considerations:

Most of the specific concerns about this configuration have been addressed within the general description section above. You must be careful to ensure that the data you enter is as accurate as you can make it.

The information within this configuration is obviously quite important, so you should check with the

Operations officer before deleting any records. The squadron's backup strategy will have taken care of backing up the flight schedules, so you do not have to worry about losing any information.

This configuration will let you store 7300 records, or 20 pilots flying once a day for 365 days.

At first thought, keeping the flight schedules on the hard disk may seem to be less secure than the way currently employed in most squadrons. Further reflection will bring a few things to light. Most squadrons keep their smooth flight schedules on a clipboard or in a file someplace near the Schedules officers' desk or the Operations yeoman's desk. It would be much easier for a disgruntled individual to take this one (and only one) file or clipboard and dispose of it downstairs in the dumpster, than it would be for him to get into the SIMS and erase the files themselves. Even if that did occur, or even if a power failure occurred that erases data, or the computer itself is dropped overboard when going aboard the ship, the squadron still will have several backup copies of its flight schedules and other files. Simply load the copied files back onto the system and you are ready to go. (Unless you need to get a new computer first)

4.5 Level Three Configurations

4.5.1 Operations Officer

4.5.1.1 Operations Officer Wheelbook

Title: Operations Officer Wheelbook

Header: OPERATIONS OFFICER WHEELBOOK

Configuration Purpose:

To provide the Operations officer with the ability to electronicaly store and administrate his appointments, assignments, and other items normally covered by a manual wheelbook.

General Description:

This configuration is definitely not intended to supplant the ever-present "little green wheelbook" now used by many officers. The intent is for the officer to be able to have a method to catalogue and report on his appointments should he find the need. This configuration will also be much more useful once the squadron receives multiple terminals. Then the officer can enter an obligation or jot down a thought no matter where in the squadron he happens to be, in a format that is consistent and will help him to organize his work more productively.

The configuration is very self-explanatory. Use the database as best suits your purposes.

Indexed Fields:

* Date of Entry
* Action or Info item
* Subj:

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations: None

4.5.1.2 OPTAR Inputs

Title: OPTAR Inputs

Header: OPTAR INPUTS

Configuration Purpose:

To give the Operations officer a concise picture of the flight hours and OPTAR remaining based on his best estimates. To be used as a management tool to watch flight hours as the quarter comes to an end, or as a projection tool to answer "what if" questions posed concerning funds and hours remaining.

General Description:

This configuration resembles a spreadsheet more than anything else. You enter information on the left side of the screen and the system will output answers to the displayed categories on the right side.

The first part of the configuration asks you for these numbers, plus your best estimate of the number of fly days in the quarter. It then displays information useful for projection purposes on the right side of the screen.

The second part of the configuration asks for the "hard" information that maintenance has. Input those numbers in the configuration and other configurations will access this data and assist you in tracking your OPTAR.

This configuration has the capability to store only four records, one for each quarter. You really should not need any more than that.

Indexed Fields

* Quarter

It is a single index.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Remember, the accuracy of your estimates drives the accuracy of the numbers on the right side of the first part of the configuration. The accuracy of your flight time records and the maintenance numbers up-to-date drive the accuracy of your OPTAR projections.

Use only four records, one per quarter. As maintenance updates you with the new numbers, simply type them in over the old ones for the same quarter. If it is currently fiscal quarter three, you only need to work in the record in this configuration that has quarter three in the top window.

4.5.1.3 CPFH/CPS Inputs

Title: CPFH/CPS Inputs

Header: COST PER SORTIE/COST PER FLIGHT HOUR

Configuration Purpose:

To establish a projected cost for CPFH and CPS date for the system to use in tracking OPTAR during the quarter.

General Description:

This is another configuration that is designed to take inputs. It is a working configuration, which means that as these estimates change, you should come into this configuration and change them.

It simply requires you to step into the configuration and enter one of the following types of sorties: ACM, TACTICAL, XC, OTHER, or SHIP. Then enter you estimate for the CPFH or CPS for that sortie type. The system will use your estimate and (since it knows how many hours of each category you have flown up to today's date) calculate the estimated OPTAR remaining.

This configuration has the capability to store 5 records, which means that you have the ability to store five types of sorties. Since their are only five categories used, you have enough.

Indexed Fields:

* Type of Sortie

It is a single index.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Use this configuration to change your CPFH or CPS estimates when you change your location. For example, when you go on an ACM det, your CPS for an ACM sortie goes down, which is the reason you go on the det. When you go to the ship, most of the sorties costs rise commensurably. You should enter these fluctuations of sortie costs anytime you expect them to change.

4.5.1.4 OPTAR Reduction Ideas

Title: OPTAR Reduction Ideas

Header: OPTAR REDUCTION RECOMMENDATIONS

Configuration Purpose:

To help the Operations officer fulfill the ADMAT requirement to document any recommendations generated by the squadron to reduce the OPTAR expended.

General Description:

This is a small configuration designed to serve but one purpose. When someone comes up to you with an idea to reduce OPTAR, rather than jotting it down on a scrap of paper, you now document it. It is a requirement, and it may help to go over these ideas to find a feasible solution to rising OPTAR costs.

The configuration is very straightforward. Enter the information as requested on the screen, and keep track of it if the idea is valid.

This configuration has the capability to store 30 records, meaning 30 separate recommendations.

Indexed Fields:

* Date
* Recommendation/Idea

Both are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You should enter the date on which you made the recommendation in the Date window provided. This permits the system to track how long the recommendation has been on the books.

4.5.1.5 Training Plan Series

This is a series of configurations designed to assist you in the process of putting out the Monthly Training and Readiness Report and to assist in the documentation for the Yearly Turnaround Training Plan. The series is accessed through the Operations Officer's menu, and the configurations are described in the following sections according to the standard format. The very first configuration in the series is designed to fill in the majority of the Monthly Training and Readiness Manual, while the subsequent configurations help you with the Training Plan.

The Training Plan series is modeled directly from the COMLATWINGPAC Training and Readiness Instruction dated 24 Jan 1985. This is COMLATWINGPAC INSTRUCTION 3500.3E. Although the instruction will most certainly change over the years, its goal will remain constant. That goal is what this series meets.

You can use this series as best meets your needs. Just as the Training Plan should be, use this series as working document. There are some configurations that will help you plan for aircraft or pilot availability, making OPTAR projections, and ordnance projections. We encourage you to use these configurations in your daily effort. Use the ordnance projection configuration to keep the Gunner apprised of the ordnance he should have on hand. Use the Aircraft Receipts/Transfers configuration to track your overall aircraft availability. Other uses are suggested for each configuration in the 'Special Considerations' portion of the description format. Your imagination is the limit.

4.5.1.5.1 Operations Calendar and Training Commentary

Title: Ops Calendar/Trng Commentary

Header: MONTHLY CALENDAR/TRAINING COMMENTARY

Configuration Purpose:

To provide a working configuration that enables the Operations officer to view the current month's projected events, and to make comments on the overall training conducted within the squadron, as prescribed by current Training and Readiness instructions. This configuration will output a majority of the Monthly Training and Readiness report.

General Description:

This is a long configuration with many pages, but only a few records and very simple to use. It helps most by providing for all the documentation needed for the last half of the Monthly Training and Readiness report.

The first part of the configuration is the calendar. Enter the month you want to work in, and then enter events that you know will occur in the various departments. Let us say your squadron wants a shrike shoot from the 21st through the 30th of February. You can enter this event in one of two ways. You can either make an entry like this, "<--SHRIKE SHOOT-->" under the days of that month you plan to have the shrike shoot, or you can make an entry like this, "<--1-->", and then enter the lower windows with the information for event number, "1", the time from, "21", time to, "30", the activity, "Shrike Shoot", and the location, "China Lake". As you notice, there is only room for six events in the events section. This is a broad overview type of calendar, so six events should cover it for the month. If you find you have more, type in the events themselves using the first method above.

The next portion of that page is only filled out at the end of the month. Enter the number of fly days you have had at sea and ashore. The system will document and track the information for the year.

The second page in the configuration asks you for any training and readiness remarks you may have for the month. You should note the day on which you make the entry. You can use more than one line if you wish; it only means that you will have less than the original 17 subject lines for

the month. It is suggested that you use this configuration whenever an item comes up throughout the month, rather than leaving it to the last day of the month, or even for two or three months, and trying to collect random thoughts. If you have questions about the type of information that goes in this part of the configuration, consult the Training and Readiness instruction. All the Training Plan series configurations were essentially modeled directly from that outline.

The next part of the configuration asks you for your training deficiencies. The format is the same again, and the information entered should be in accordance with the dictates of the Training and Readiness instruction.

The third part of the configuration asks for any revisions to the Training Plan you may have made during the month. These are documented in the same fashion as the earlier sections.

The final page in the configuration is the miscellaneous remarks section.

When you have completed making an entry in any section, you can press the SAVE RECORD Flex-Key and have that record saved. When you come into the configuration from the menu system, you should select the month you want to work in by moving the cursor into the Month window, typing in your choice of month, and pressing the FIND Flex-Key. The system will show you the record for that month. You can now edit or add comments.

This configuration has the capability to store 12 records. Look at it this way. It is as though you have a filing cabinet that holds 12 manilla folders, one for each month. In each folder, you have several of the same mimeographed pages. If it is February, you will make your comments in the February folder. If you plan to shoot a shrike in September, you would pull out the September folder and enter that on the calendar. The SIMS just automates the process. All you need to do is make the appropriate entries. Spend your time planning, not keeping track of paperwork.

Indexed Fields:

* Month

It is a single index.

Files Opened by the Configuration: None

Key Procedures:

Use the F7 and F8 keys to page through the configuration if you have an IBM-style keyboard.

Software Locks: None

Special Considerations:

The only admonition regarding this file is that you use it as the comments come up rather than waiting until the end of a long time period. Your ideas will not be as fresh or as accurate as if you had documented them when they first occurred to you.

4.5.1.5.2 Operations Training Plan Calendar

Title: Operations Training Calendar

Header: OPERATIONS TRAINING PLAN CALENDAR

Configuration Purpose:

To provide the Operations officer with a tool to obtain a broad overview of his planned activities for the year.

General Description:

This configuration is the first of those designed to help you construct the Training Plan. Modeled after standard Training and Readiness instructions, it adds the facility to catalogue your yearly events, helpful in collating your activities.

The configuration has one page, but two parts. The Event number column is to the left while the months of the year go out to the right on the top of the page. Under the lines you use to fill in your events (the long ones), there is a section to enter an event number, the event itself, its location, and the beginning and ending dates.

You can use the configuration in one of two ways. Either you can enter the name of your event on the large lines in the first part of the configuration, or you can reference your events by event number, using the column to the left, and the Evnt# and Event windows at the bottom of the page. Some experimentation with both styles will help you discover which method you are most comfortable with.

We suggest you do the following. When you sit down to enter this configuration, you usually have a pretty good idea of many of the events for the year you are going to enter. Set them all down on the long lines as follows.. "<---1--><------2---->" under the appropriate months, and then when you have finished entering all the "lined" events that you know of so far horizontally through the year, (use as many lines as you need) go down to the bottom and enter each event number and its corresponding event, location, etc. As you enter each event by pressing the RETURN key after the End Date window, the bottom windows will clear allowing you to enter the next event, but the top, long lines of the first part of the configuration will remain as you typed them, letting you

view your entire planning effort and entering the corresponding events one by one.

Using the configuration in this fashion will permit you to make excellent use of the Query utility when you need a quick printout of your yearly events. It will help you organize your efforts and present you with a clear picture of what you expect down the line.

This configuration has the capability to store 30 records. This means that you can fill up 30 of the screens with events, or you can enter 30 events in the event section on the bottom. The part on 'Special Considerations' in this configuration description will discuss how to make the best use of those records.

Indexed Fields:

* Evnt#
* Event
* Begin Date
* End Date

Evnt# and Event are single indices, while the Begin Date and End Date are multiple indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

The developers designed this configuration to give you the ability to catalog your events AND see them on a "horizontal presentation" to aid you in picturing the flow of activities. Because of this feature, it presents some special considerations in the operation of the configuration.

You have 30 records in this configuration. You should think of that as having 30 different manilla folders in a file cabinet drawer. We suggest you use one record to type in all of your events. This way you can see how they relate to each other, which is the reason for this horizontal presentation. Using that one record, numbering each event on the line with a different number, you should type in the event number and its corresponding

information in the bottom section of the configuration, save the record, and then enter the next event in the next record. Although you will still see the events from the last record, go ahead and enter your next event. The system has a feature that "retains" those events on the long lines to let you get a picture of all the activities each time you enter an event. We suggest that when you enter the configuration, move the cursor down to the Evnt# window and press the FIND Flex-Key. If there are any records in the database, you will see the first presented on screen. This should be the record that you have decided to enter all your events on. Add any events to this page, and continue to work.

We advise that you do NOT start typing events from the top as soon as you come into the configuration, unless it is your very first time. When the system shows you the empty screen, that is a new record. You want to make sure that you keep all your events on one record as much as possible.

If you have more events than will fit on the screen for one record, continue on to the next record and enter them there. That is okay. The idea is to keep the horizontal event lines on as few records as possible so that you can see every scheduled event.

If you ever have question about whether you are seeing every scheduled event, you can easily use the Query utility to query the bottom section of the configuration. This bottom section DOES hold every scheduled event (if you had entered them) and the output from Query will list them all for you in the format you choose.

4.5.1.5.3 Aircraft Receipts/Transfers

Title: Aircraft Receipts/Transfers

Header: AIRCRAFT RECEIPTS/TRANSFERS

Configuration Purpose:

To provide a documentation tool to the Operations officer to track the receipt and transfer of aircraft.

General Description:

This configuration works in a way similar to the previous one. It lets you see the horizontal presentation of receipts and transfers over the course of the year, and lets you catalog particulars about each.

For a description of how best to utilize this configuration, you should read the general description and special consideration sections of the OPERATIONS TRAINING PLAN CALENDAR configuration description.

You have the facility to enter the modex on the left side, and the event that has to do with that aircraft, at the particular time of the year, on the right side in the "long" lines. Then at the bottom of the configuration, you will see windows to enter each modex and the particulars concerning that aircraft.

Again, we advise you to keep the "long line" entries on as few records as possible. You should be able to get 15 different modex numbers on one record, and use the other records to document what will happen to those fifteen aircraft. To make sure that you have that one record when you come into the configuration, move the cursor down to the Buno field and press the FIND Flex-Key. The system will find the lowest number Buno, and its associated record, and display it on screen. We suggest you use this as the record on which to enter all your long line entries. The system will again retain those long line displays when you make the entry on the bottom portion. Soon, each of you records in which you have entered an event will display all your long line entries.

This configuration has the capability to store 30 records. We suggest you use as few records as possible to put your long line entries on, and the rest to enter the bottom portion with particular details about those long

line entries. Soon you will have all the long lines on every record, which will be as it should be.

Indexed Fields:

* Buno
* Evnt#
* Event
* Date Out
* Date In

Date Out and In are multiple indices. The rest are single.

Files Opened by this Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Remember to first move the cursor down to the Buno field to find your "reference" record. The system automatically shows you a new record when you call up the configuration, and you do not want your horizontal lines spread through all 30 records separately.

In addition to using this configuration to tell you when you are going to get aircraft or give them away, you could always use it to tell you as the Operations officer when aircraft are going into SDLM, or when an aircraft may be unavailable for flights because of a scheduled maintenance or Wing inspection. Maintenance can help you here by advising you of when these things are happening to your aircraft, and you can then input that information. Then, query the database and find out how many aircraft you expect should be available when you plan dets or at-sea periods.

For example, let us say you have gotten together with maintenance and entered all the dates they have scheduled for their semi-major aircraft inspections, (out for a week or so) plus any other incidentals like needing two "up" aircraft in the compound to practice for a particular inspection for two weeks. You enter all these known parameters, and then ask the database, using the Query utility, how many aircraft you can expect to have on any day, or period, you choose.

4.5.1.5.4 Flightcrew Gains/Losses

Title: Flightcrew Gains/Losses

Header: FLIGHT CREW GAINS/LOSSES

Configuration Purpose:

To provide a documentation tool to the Operations officer that will help him track the flightcrew availability for training purposes.

General Description:

This configuration has three pages, which gives you the ability to store a lot of pilot gains and transfers. Again we suggest you use only one record to make entries on the long lines, and the last page of the configuration to enter the particulars about each long line entry. If you have trouble knowing who has what Rocket number, you can just use the long lines to enter the pilots, and leave the Rocket # window in the last page empty. Up to you. (a small index card taped next to the computer with that information would be helpful) We suggest you use the first record in the configuration to store all the long line entries. It should be the record attached to the first alphabetically-occurring name. For a more complete description of this process, read the OPERATIONS TRAINING PLAN configuration section.

Indexed Fields:

* Name
* Event
* Date Received
* Date Detached

Date Received and Detached are multiple indices. The others are single.

Files Opened by the Configuration: None

Key Procedures:

With an IBM-style keyboard, use the F7 and F8 keys to page backwards and forwards, respectively.

Software Locks: None

Special Considerations:

Remember to move the cursor down to the first indexed field (the one with the adjacent asterisk) and call up the first record. Keep your long line entries on as few records as possible, to help your overall visualization of the gains and losses picture.

You can also use this configuration to plan or project pilot availability for specific periods, just as is done with the Aircraft Receipts/Transfers configuration, using the Query utility.

4.5.1.5.5 Facilities/Range Requirements

Title: Facilities/Range Requirements

Header: FACILITIES/RANGE REQUIREMENTS

Configuration Purpose:

To provide long-term projections of use for required or desired facilities necessary to accomplish training.

General Description:

This configuration functions in the same manner as do most of these in the series. For a complete description of the best suggested use of this configuration, read the OPERATIONS TRAINING PLAN CALENDAR configuration description.

Indexed Fields:

* Evnt#
* Event
* Range/Facility Required
* Begin Date
* End Date

Begin and End Date are multiple indices. The rest are single.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Remember to keep the long line entries on as few records as possible.

Use this configuration as a "Range appointment book". Once every month or so, go into the Query utility and print out your required ranges and the dates, call the scheduling agency for the range and make the reservation. Then make a small note in the configuration wherever you want, advising you that the range has been reserved.

4.5.1.5.6 Officer Ground Training

Title: Officer Grnd Trng/School Req

Header: OFFICER GROUND TRAINING

Configuration Purpose:

To provide documentation for general and specific training areas that will apply to the officers throughout the Training plan period.

General Description:

Since this Training Plan series follows the Training and Readiness instruction, this configuration is also broken into four sub-sections, or parts, to "identify specific training objectives", as stated in the instruction.

The first part, Part I, deals with local schools. Enter the course name and number in the windows provided. For example, "LAWES Tactics", and "(E-2A-0030)". Enter the dates for the schools, and the name of the individual or group attending.

The second part of the configuration covers External Schools. In addition to entering the above information, you must decide if the school is required or desired, the estimated TEMADD expense, (use the TEMADD projections configuration to help you do that) and the school location. The Totalled window is there for whatever purpose you may have for the financial concerns. Neither the TEMADD Expense window or the Totalled window is numerically formatted, so you should enter the dollar sign and decimal points yourself. It is designed to be a reference for you when you look over the records, and it goes nowhere else.

The third part of the configuration deals with the Lecture Guide Syllabus/Debrief Schedule. Use this section to plan out your training lectures over the course of the Training Plan period, and input your best estimate of debriefing times for the mission planning debriefs.

The fourth part of the configuration deals with your proposed AOM/APM schedule. You should indicate the day on which your squadron plans to hold routine ground training for the officers and pilots.

This configuration has the capability to hold 50 records. You should think of this as one manilla folder in a file drawer, with 50 mimeographed sheets in it. To illustrate with an example: if you first wanted to make an entry in the Local Schools portion, you would pull out the first piece of paper and do so. A day or so later you want to make an entry in the External Schools portion. You would pull out that same piece of paper you made the first entry on, and enter your information in the External Schools category, because you want to fill up one mimeograph form before going on to another, so as not to waste space on your your forms. Just so with this configuration. You do not want to "waste space on your records". When you come into the configuration to make an entry, try and find a record that already has something on it in another category. (other than where you want to make your entry, obviously) You do this by moving the cursor to an indexed field that is not in the category you are interested in and pressing the FIND Flex-Key. This will call up another record. If that record has something in the category where you want to make an entry, press the NEXT and PREVIOUS RECORD Flex-Keys until you come up with empty windows where you need to make your entry. If you come to the beginning and the end of the file before then, that means that every record in the file has something in your particular category of interest. Then just press the CLEAR Flex-Key, clearing all the windows, and make a new entry. All the mimeographed forms are filled up and you will just start a new one.

Indexed Fields:

* Name/Group for Local Schools
* Name/Group for External Schools
* Title/Subject matter for Lecture Guide Syllabus

All are single indices.

Files Opened by this configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You can use this file as a tickler file to help remind you of the upcoming schools a particualr officer or group of officers will need. After you make the entries early on in the Training Plan stage, you can print out the Name/Group and the dates and schools they will need, and make notes of it for future reference.

4.5.1.5.7 Maintenance Training

Title: Maintenance Training

Header: MAINTENANCE TRAINING

Configuration Purpose:

To provide a documentation tool that helps establish enlisted maintenance training requirements to be projected throughout the turnaround cycle.

General Description:

This configuration is similar to the OFFICER GROUND TRAINING configuration in the way it works and also in the need for you to "not waste your record space". Use up all the categories in one record before you call up another.

This configuration has three sections to it.

The first part is Local Schools. It takes your inputs for the course name and number, the beginning and ending dates, and the number of people and their rates.

The second part covers External Schools. Input the course name and number, the beginning and ending dates, the number and rates of those attending, the location and whether the school is required or desired. Input your estimated TEMADD expense for this school. (the TEMADD projections configuration will help you with that) The last window is left for your use, in any fashion you choose.

The third part has to do with In-House and On-the-Job training scheduled throughout the Turnaround. Enter the day and time your squadron expects to hold maintenance training. If the squadron will fly during this time, space is provided to explain the reasons, if you so desire. (We included this window because the current training instruction specifies that flights will not be scheduled during this period; if they are, it would be nice to have a documented reason.)

This configuration has the capability to store 50 records. For an explanation of how best to manage these records, read the OFFICER GROUND TRAINING configuration description.

Indexed Fields:

* Course Name in Local Schools
* Course Name in External Schools

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Remember not to waste your record space. 50 records should be sufficient to hold all your planned maintenance training.

4.5.1.5.8 Manning Deficiencies

Title: Manning Deficiencies

Header: MANNING DEFICIENCIES

Configuration Purpose:

To provide a documentation tool that helps the Operations officer to prepare and plan for anticipated personnel shortages impacting squadron combat readiness.

General Description:

This configuration has two parts. The first lets you address pilot manning, and the second addresses maintenance shortages. This configuration helps you document these anticipated shortages as required in the Turnaround Training Plan.

The first part of the configuration asks you for a projection date, your present flight crew allowance, and how many you have assigned, plus any gains. It asks the squadrons' opinion of the present manning situation, and if assistance from higher authority is required. There is space to make remarks or specify your particular needs.

The second part of the configuration works in essentially the same way.

This configuration has the capability to hold 10 records, which means that you can make 10 different projections through the year.

Indexed Fields:

* Projection Date

Single index.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You can make good use of this configuration by making a new projection each time your manning situation changes. Since each projection has its own date, this documents your tracking of the situation, and gives you an updated picture of how higher authority is responding to your manning needs. It is also a tickler file to remind you to tweak the manning people if you anticipate running out of personnel to function properly. Although this configuration will not jump up and grab you and inform you of the fact that you will be short of people, it will make you think about the situation periodically.

4.5.1.5.9 Projections and Readiness levels

4.5.1.5.9.1 OPTAR Projections

Title: OPTAR Projections

Header: OPTAR PROJECTION

Configuration purpose:

To identify periods where reduced funding or increased operations may impact the level of OPTAR required or alloted.

General Description:

This configuration was designed to follow the guidelines specified in the current Training and Readiness instructions. It expands on those guidelines to present you with a documnetation tool to track each particular fiscal quarter and the OPTAR concerns within each.

The configuration appears to you much like a spreadsheet. It has three pages; the first two get your inputs on anticipated funding and expenses, and the third is "the bottom line", showing you whether you will have a deficit or excess at the end of each quarter. These numbers are based on your estimates. Just as in any spreadsheet, you can jockey these numbers in a "what if" mode. "What if" you took a det next quarter; would you have enough funds to cover it? You could do these calculations yourself, but then you would have to store the paper somewhere, and if you wanted to re-arrange some numbers, you would have to do more calculating. This configuration does these calculations exactly according to the required instructions and stores the results for you. If you want to manipulate some numbers to explore alternative planning strategies, you can do so in seconds.

Every window in this configuration is a formatted window, which means that all you should do is type in numbers. No commas and no dollar signs. The configuration will place numbers in certain windows in response to your inputs in other windows, and move the cursor to those windows where you should make your inputs.

The first page starts with the first month in the calendar year, which is the first month in the second fiscal quarter. It continues with the third quarter. The second page has the first and fourth quarters. The last gives you the bottom line information. All this last page does is compare the amount you think you will be funded for the quarter to the amount you think you will spend during that quarter and show you the difference. It does so for each quarter. If the number is negative, it means you planned to spend more than your were allotted. If it is positive, you should expect to have excess funds. Maybe increase the flight hours or something.

This configuration has the capability to store only 3 records. This means that it gives you the ability to make projections three years in advance. Realizing that in fleet operations that is a joke, the designers still wanted to include three years of projections. You could always have the past two years in the system as reference for new Operations officers.

When you come into the configuration, go to the Year window, type in the current year, and call up the record for that year with the FIND Flex-Key. Work on the record as each quarter progresses. When you have a more accurate idea about certain numbers, go into the configuration to the proper record and enter them as updates. For example, if it is the end of the month the projected monthly flight hours are known. Go into the configuration and enter that number. Your overall picture will be more accurate. When maintenance gives you the end-of-the-month flight costs, you can enter them also.

Indexed Fields:

* Year
* Projection Number

Single indices.

Files Opened by the Configuration: None

Key Procedures:

On IBM-style keyboards, use the F7 and F8 keys to page back and forward, respectively, through the configuration.

Software Locks: None

Special Considerations:

Although you only have three records to work with in this configuration, we put in another field, the projection number, to let you keep track of how many times you change or edit your OPTAR projections.

Every time that you go into the configuration to edit some numbers, you could just add one to the number in this window. Or you could use letters, since the window is not numerically formatted. When you print out these projections, it helps you keep track of them according to time. Should you find these projections at a later date, you would know that you made the 3rd projection before you made the 7th projection, so the 7th projection is more accurate.

4.5.1.5.9.2 Ordnance Projections

Title: Ordnance Projections

Header: ORDNANCE PROJECTIONS

Configuration Purpose:

To help identify the minimum ordnance required to attain full combat readiness in conjunction with Liberty Elite requirements, during the initial portion of the Training Plan development.

General Description:

This configuration helps you document your ordnance requirements for the turnaround. When you sit down to plan the turnaround, use the other configurations to give you an idea of your operational commitments, and then take those commitments that require ordnance and plan that allocation here.

For a complete description of the design and operation of this configuration, refer to the OPERATIONS TRAINING PLAN CALENDAR configuration description. This one is very similar.

You should attempt to conserve your records in this file to better present you with an overall picture of the total ordnance allocation. Use one record's top portion to show you the overall plan, and the other records to document each event from the first record.

Use the bottom portion of the configuration to enter specfics about each particular ordnance event. "Type" is one index to this file, so you can summarize your ordnance requirements by type. Or by the dates you plan to expend it, or by the events on which you plan to expend it. Each index presents several different ways to use the configuration.

If you are unsure of the amount, enter you best estimate. This Amount window is not formatted, so if you need alphanumeric information here, that is permissible. For example, you may want to specify "10000 RDS" for a particular event where you plan to strafe. "20MM" would go in the Type window.

This configuration has the capability of holding 36 records. You can have 36 different events throughout the year with detailed explanations accompanying them in the

bottom portion, and more placed on the longer lines with no explanation.

Indexed Fields:

* Evnt#
* Event
* Begin Date
* End Date
* Type

Begin and End Date are multiple indices. The rest are single.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You will probably want to keep the Gunner constantly aware of the contents of this configuration. Do so by just using the Query utility to print him out a neat little report that lists all your anticipated ordnance expenditures by beginning date, or by event, or even by type. It might help him in ordering the ordnance to be able to summarize what is needed by type.

4.5.1.5.9.3 TEMADD Projections

Title: TEMADD Projections

Header: TEMADD PROJECTION

Configuration Purpose:

To provide a documentation tool that helps estimate the TEMADD funding requirements for the turnaround cycle.

General Description:

This configuration is intended to help you get a clear picture of your upcoming TEMADD expenses during the turnaround cycle. It is a very simple but very powerful one-page configuration that will collate all your TEMADD expenditures for each quarter, and within each quarter, for three particular areas; Pilot training, Maintenance training, and Administrative/Support training.

The first window in the configuration asks you which type of training this TEMADD projection is for; either pilot, maintenance, or administrative/support. Enter the appropriate training category as shown in the little example to the right of the window. Then input the quarter for which this projection is made. After that, you simply enter the information the configuration asks for.

As the configuration asks you for certain numbers, it will make calculations based on your inputs. If you want to change an input, go right ahead. Just make sure the record you save is the one you want saved. When the system makes its calculations, it will put numbers in certain windows. You will not have to enter numbers in those windows.

When you go into this configuration, it would be a good idea to know the current TAD rates for officers and enlisted.

This configuration has the capability of holding 25 records, which means that you can make 25 different TEMADD projections. You can distribute these projections through the fiscal quarters as best matches your operational schedule. You do not have to restrict yourself to only five or six projections per quarter. Your max is 25. Arrange them as you wish.

Indexed Fields:

* Type of Training
* Quarter
* Begin Date
* RQD/DSR (required or desired training)

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You can meet the requirements for all your TEMADD estimates by using this configuration and the Query utility. As you enter each projection, they will soon accumulate. During your planning, you may not enter each projection in the proper chronological order; that is okay. Enter a projection as the possibility or requirement comes up. For example, let us say you KNOW you will be making weapons det in late March, but it is only October now. Enter it anyway, and then if something comes up to project in January, enter that one also. Now, when it comes time to put out the Training Plan, go into the Query utility and put out the information in the configuration as follows:

Have it print out, by Quarter and then by type of training, all the REQUIRED training; first the pilot category, then the maintenance category, then the administrative/support category, and total each field. The utility will go through all your entries and arrange them first by quarter, then by type of training, then add up each training cost and give you the total.

This is not intended to be a description of how to use the Query utility, but just to show you how the power of a database and its accompanying report procedure can fulfill your information management needs.

4.5.1.5.9.4 Programmed Squadron Readiness Levels

Title: Programmed SQDN PMA levels

Header: PROGRAMMED SQUADRON READINESS LEVELS

Configuration Purpose:

To provide a vehicle that establishes monthly projections of squadron readiness levels throughout the turnaround period. You may use it also to indirectly establish goals for monthly Liberty Elite efforts to achieve full combat readiness.

General Description:

This configuration is perhaps the closest you will come to pure speculation. It can be a useful tool if you use it to set realistic and achievable readiness goals.

The configuration works a little differently that the previous configuration that look like this, with the long lines under monthly headings.

To best illustrate the way this configuration works, let us use an example. Say you will have a REFTRA on the 24th of January until the 5th of February, a Fallon det on the 1st of March until the 18th, and then an ORE from the 5th of June until the 16th.

First, go into the configuration from the menu system and move the cursor down to the Event window. Enter "REFTRA", and "24/01/86" for the beginning date, and "05/02/86" for the ending date. Enter "SOCAL OPS", or some such item if you wish in the remarks window. Now before you press the RETURN key, use the BACKWINDOW Flex-Key (F2 on an IBM keyboard) to move the cursor back to the 'long lines' adjacent to the AAW letters. Somewhere under the January/February headings, make your projection for the AAW figure. Then move down and make your projection for the ASU category, and on down the line. Make your call on the overall number, and finally the C-rating. Now you can press the SAVE RECORD Flex-Key to save the record.

Next, again move the cursor down to the Event window and enter "FALLON DET", and the respective beginning and ending dates. Move the cursor back up to the PMA lines and make your projections somewhere under the proper time frame. Then save the record, and continue on with the next one, which would be the ORE. Enter it in the same fashion.

This horizontal layout lets you get the overall perspective of how your PMA numbers should increase, especially if you first enter the configuration, start with the first record, and use the NEXT RECORD Flex-Key. You should see the numbers march from left to right and get bigger as time goes on. (or right to left if you start in December)

This configuration has the capability to hold 25 records, which means you can store 25 projections.

Indexed Fields:

* Evnt#
* Event
* Begin Date
* End Date

Begin and End Date are multiple indices. The rest are single.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Use the Projection # window at the top to help you guage the relative accuracy of your projections. You could make all the odd projection numbers your projections, and then when you actually complete an event in the database, you could enter the real PMA numbers alongside the projections, and give that record an even projection number. You can use it whatever way best helps you to organize your information. The Year window is used in case your turnaround "wraps around" from one year to the next.

4.5.2 Training Officer Configurations

4.5.2.1 Training Officer Wheelbook

The Training Officer Wheelbook configuration is the same configuration as the Operations Officer Wheelbook, and discussion on its operation may be found under that configuration's description. The only difference between the two is the Title and Header.

4.5.2.2 Training Jackets

Title: Training Jackets

Header: NATOPS FLIGHT PERSONNEL TRAINING/QUALIFICATION JACKETS

Configuration Purpose:

To provide you the means to record, verify, access, and report on your pilot's training and qualification records in the most expeditious manner.

General Description:

This configuration is NOT designed to take the place of the currently used training jackets. There is such a disparity in information sources that supply data to the training jackets that to automate them directly would not be feasible at this time.

What this configuration does do is permit you to keep track of all those individuals who have had fire fighting in the last 9 months, or find out who is qualified as a wing strike lead and also has been to CSSP school, AND has a "Special" instrument rating. It gives you the ability to reach into your pilot's records and extract information that normally would take you a few days to obtain.

The configuration is laid out exactly the way the training jacket sign-off pages appear in the real training jackets. Every category that is in the real training jacket on that page is in the configuration. Instead of this manual stepping through every page of the configuration, simply open a training jacket and go over the pages yourself, then review it in front of the screen while looking through the configuration. You will see how similar they are.

You may be asking yourself why you should enter information into this configuration when you already will have to enter it once in the training jackets anyway. Good question, and the answer is that you do not have to enter anything in this configuration if you do not want to. The reason you should is because it will save you a lot of time when you have to sort through your jackets to find out who has had some school since some date. The Wing is expert at sending those type of question down to the squadrons. This configuration helps you answer them in

three minutes. (Better than that, one day they will be on the network and they can just look it up for themselves.)

The configuration accepts exactly the same information as a real training jacket signoff. There are no different procedures to learn. Simply enter the information requested when someone attends a school or achieves a qualification.

The configuration is also indexed by Mishap Description, so you have the ability to list all the recorded mishaps that your pilots have been involved in, if you should ever want to do such a thing. The Safety officer might want that type of information.

This configuration has the ability to hold 500 records. Each pilot should have at least one full record, and several more, because of the requirement for signoffs at each different milestone. For example, ENS Schmackeratz has just made Section Lead. Enter that into the MISSION QUALIFICATION RECORD section of the configuration. Then, at a later date, LTJG Schmackeratz qualifies as a Division Lead. If you call up Schmackeratz's record, you will see he already has something entered in the MISSION QUALIFICATION RECORD section. You must start a new record. Do so by just starting at the top of the configuration and entering his last name, "Schmackeratz", his first name, "Floyd", and then going down to the MISSION QUALIFICATION RECORD section and entering the qualification for Division Lead.

Indexed Fields:

* Last and First Name
* Designation
* Mission Qualification
* School/Course
* Mishap Description

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

There are fields in this configuration that simulate those on the real training jacket which require someone's initials. The security measures involved to make something similar in this sized computer application are really not worth the effort, especially for the purposes of this configuration. This is not the individual's absolute final record, but just a compendium of information, also stored elsewhere, that helps the training officer do his job. Do not let the fields for initials give you pause. If the CO wants to come and type in his initials, fine. If he does not, it will not hurt your data one bit.

Make sure that you fill up all the spaces, or sections, in an individual's record. We will use an analogy to illustrate the point. You can think of this configuration as one manilla folder with 500 mimeographed sheets in it. You will take one out at a time and put an individual's name on it. In doing so, you will put it in another manilla folder just for that individual's mimeographed sheets. Now when you go to enter something else later concerning that individual, you would be wise to check his individual folder to see if there is room on a sheet to enter the information you need to enter. If there is, you will pull the sheet out of the individual's manilla folder. If there are no more sheets that have an empty section where you want to enter information, then you would go to the big folder and just get a brand new clean sheet. You make the most of your mimeographed sheets that way. The way this translates to the database is as follows: first you go to the Name window and enter the individual's name about whom you want to enter some information. You press the FIND Flex-Key, and the system will respond with the individual' record. If he has more than one record, pressing the NEXT RECORD Flex-Key will show you those. You have in essence taken out a "sheet" (a record) from the individual's manilla folder. Check through the pages in the configuration to see if the section where you need to enter information is empty. If it is, then enter your information, save the record, and you're done. If you can not find any of his records that have that empty section, then you will have to "put that sheet back into the individual's folder" by pressing the

CLEAR Flex-Key. This clears all the windows, and now you just start a new record by typing in the individual's last and first name at the top of the configuration. This is the same as getting a new mimeographed sheet from the "big" folder.

Kabish? Piece of Pie.

4.5.2.2 Weekly Training Plan

Title: Weekly Training Plan

Header: DAILY TRAINING PLAN:FLIGHT EVENTS

Configuration Purpose:

To provide the Training officer with the ability to automate the task of generating the Weekly Training Plan.

General Description:

At first glance this may appear to be a "busy" configuration, but it is really nothing more than what most squadrons have per event on their weekly training plan. It just looks busy because the SIMS has to always allow for things like the possibility of scheduling six pilots on an event. (Some squadrons are lucky if they have six "up" aircraft for the day.) You certainly do not have to fill in all the blanks you see. Use them all if you need them, or do not use any at all.

The configuration starts with the day and the date inputs, and then asks you if any flights are scheduled for the day. On most training plans there will be mention made if there are no flights scheduled for a particular day. The configuration continues, asking for all the information that you normally put down while "roughing out" the next weeks' flight events.

The section for pilots requires that you enter the pilot's last name only, and any backseater that may be accompanying him. Enter the mission notes if you have any for that event. Note that as the system moves the cursor across the screen, it goes from left to right. Looking at the configuration itself now, notice that this means you will get the chance to enter mission note number 1 before you enter pilot number 3's name. It is nothing to cause difficulties, but be aware that that is how the system moves the cursor. The windows are arranged that way to keep everything on one page.

You will next come down to the ordnance for the hop. Enter first the type and amount of ordnance you want to go on the mission. If you have a preference about who should carry that particular ordnance, enter his pilot number next to the type and amount windows. If you want every pilot on the event to have the ordnance, just make an X in

the ALL window. These pilot numbers are the ones you see right next to the Pilot windows...Pilot1, Pilot2, Pilot3, etc. As the Training officer, you know who needs to drop what particular type of ordnance. Here is where you make that specification.

The Reports section has a report that will output all the information you enter here. The Schedules officer will obviously make good use of that report. You can also send it down to the Gunner, who could use it as a guide for his ordnance work for the period.

Indexed Fields:

* Day
* Date
* Syllabus Sortie
* Target/OP area

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

The first point that we should mention is that although this configuration is entitled "Weekly", you can and should use it for much more that just a weekly outline of the flight plan. If you want to schedule important training far down the line, use this configuration. Let us say you call China Lake and the only day you can get a target time to shoot a shrike is three months from now. Make the right entries in this configuration immediately. You would be smart to run the Liberty Elite report to the screen real quick and ask it who will expire in Shrike three months from now to be able to enter the pilots who would maximize your PMA numbers. You can then schedule them for the event THREE MONTHS in advance with this configuration, and have it there when you call for it a week prior to print out that week's training plan. You will not forget it.

Another way to use this configuration is to plan out an entire det with it. Let us say you know you will be going to Fallon in March for three weeks. Start planning now, because with the SIMS, you can know today which pilot

will have expired in which training category by then. Write out a rough training plan for the entire det, run it out with the Training Plan Report, and check it over for consistency.

On the top of the configuration you will notice there are two places to enter the sortie information. One is the Type Sortie window, and the other is the Syllabus Sortie window. Every squadron (for which this version of the SIMS was designed) flies these type of categorized sorties, such as WEPS, or ACM. Use whatever classification appeals to you, but remember, use the same thing every time. When you go to get consistent information out of the database, you want to have the sorties consistently described. The other window was incorporated for squadrons who follow a particular training syllabus and schedule their hops with these designations. You see the examples on the configuration, such as WEPS 2, or ACM 6. Again, use these designations if they fit with your squadrons' policy. When someone from the Wing asks who was planned to fly what type of syllabus sortie during the last five months, you will be a star.

If you use this configuration for events in advance, make sure to note whether or not the target area scheduled requires a reservation. When you print out this plan to give to the Schedules officer, he can make the proper reservations just by checking whatever target area requires them from your report.

4.5.2.4 Ground Training Accomplished

Title: Ground Training Accomplished

Header: SQUADRON GROUND TRAINING ACCOMPLISHED

Configuration Purpose:

To provide a documentation tool to the Training officer that will assist him in tracking completed ground training.

General Description:

This configuration was designed to replace that file you now possess that documents the ground training your squadron has accomplished. It provides you with the ability to both schedule training lectures, output the schedule to those officers who are required to give those lectures, and document the training once it has been achieved.

The configuration starts by asking you what type of "Training Subject" you have in mind, like ACM, or Course rules, or NATOPS, etc. Then enter how you intend to present this training subject to the squadron. Will you give another lecture, will it be a film, a tape, or a guest lecturer? Whatever you arrange, enter it in the window for Method of Presentation. If this particular ground training will be obtained from a school, you should so state. For example, your LSO's should be scheduled to go to Phase One school before they are eligible for a Wing LSO Qualification. You should schedule this information.

The next portion of the configuration asks you who is assigned to present the training subject using the noted method. If you assign ENS Schmackeratz a CQ lecture, enter his name here. Then enter the date of which you intend this training to happen. If the training spans days, enter the first day. In the Remarks section, you can enter "scheduled" to denote a record for a particular training event that has not yet been completed; when it is completed, find that record and just change the "Scheduled" to "Completed".

Unless it is otherwise obvious by the subject, it is assumed that all your pilots receive the noted training. If a pilot misses a ground training event, you should enter his name here to track who missed the event. Later

you can print out these absentees alongside the training subjects they missed and perhaps have them make it up.

The Reason window was included strictly as an option. If it is your squadron's SOP to specify why an officer did not make a scheduled training event, then enter the reason in the window. If your squadron does not track that information, then just leave it blank.

This configuration has the ability to hold 500 records. This means that you can schedule and/or document 500 different ground training events. If that seems like a lot to you, it might be a good idea to let the file accumulate over the course of a year or so to give the new Training officer a good source of reference when he goes to decide on what training he should generate. This helps prevent "re-inventing the wheel".

Indexed Fields:

* Training Subject
* Presented by
* Date

All indices are single.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

Another use that this configuration will serve is to tell you who has delivered what lectures over the course of time. You can use the Query utility to list the "Presented by" field next to the "Training Subject" field, along with each attendant date. You can keep the lecture assignments even this way.

4.5.2.5 PMA Categories Expired File

Title: Transfer File

Header: TRANSFER FILE FOR PMA REPORTING FUNCTIONS

Configuration Purpose:

This is a "transfer" file that accepts information from the first part of the PMA Expiration Dates report and sends it to the second, output part of that same report. It was designed to assist the relay of information from one to the other.

General Description:

Although at first this file was designed only as an internal "holding area" for information coming from the first part of a report to the second part, after some consideration, the designers realized that this file could provide the Training officer with instant answers to such questions as ,"Who is expired in ACM III right now?". This file only has two fields, the Training Category and the Last Name. Both are indexed.

At the beginning of the PMA Expiration report, code erases all the records in this configuration. Then the report runs and "fills in" the names of those pilots who will expire in the categories based on the date selected in the PMA Expiration report. Therefore, if you want to make use of this holding configuration, you should go into the PMA Expiration report and run it first. When you run the PMA Expiration report, it will ask you for a date. Think of this as a "drop dead" date. The report will tell you which pilot will expire in which category after this date, and it will send the information to this configuration. Then you may make your inquiries.

If you want to find out in which category a particular pilot has expired, enter his name in the Flightcrew Name window and press the FIND Flex-Key. It will show you the first record for that pilot; now as you press the NEXT RECORD Flex-Key, you will walk through each successive record for that pilot, showing you all his expired categories. When you get to a new pilot, you have seen all the expired categories. If, when you press the FIND Flex-Key, the window shows you a different pilot,

that means that the file does not have any expired categories in storage for your original pilot. He is C-1!

If you want to see which pilots have expired in a particular category, enter the Training Category window with the category you have in mind. Make sure you enter the category just as it is in the training matrix. "ACM III" is not the same as "ACM 3". After you enter your category of interest, press the FIND Flex-Key. This will call up the first record that has that particular category on it, showing you also the name of a pilot who is currently expired in that category. If, when you press the FIND Flex-Key, the window shows you a different category, that means that no one has expired in your original category and the system is continuing on to the next category alphabetically.

This configuration has the ability to hold 5000 records. This means that if you have 100 pilots in your squadron and they are all expired in 50 training categories, the system can still hold all the information each time the PMA Expiration report runs. If you have more than 100 pilots in the squadron, hopefully all of them are not expired in every category.

Indexed Fields:

* Training Category
* Flightcrew Name

Both are single indices.

Files Opened by this Configuration: PMA Expiration report.

Key Procedures: None

Software Locks: The records are erased at the beginning of each PMA Expiration report and filled in by the report based on user input. Unless the report is run, this file will remain empty.

Special Considerations:

Remember to run the PMA Expiration report before coming into this configuration.

You can use the Query facility to get output from this configuration for any category or pilot. It will list which categories in which only one pilot will expire in, or if you choose it will list all pilots who will expire in a particular category.

If you want today's current information on your squadron's PMA status, just run the PMA Expiration report using today's date. It will output the hard numbers and you can check this configuration for particular pilots or categories.

4.5.3 Weapons Training Officer Configurations

4.5.3.1 WTO Wheelbook

For the complete description of how this database works, see the configuration descriptions for the OPERATIONS OFFICER WHEELBOOK configuration.

4.5.3.2 Ordnance Transfer File

Title: Ordnance Transfer File

Header: ORDNANCE EXPENDED

Configuration Purpose:

To track ordnance expended as it is recorded on the flight schedule.

General Description:

This configuration is another of the "transfer files" that transfer information from a database configuration to a report. It takes ordnance information from the day's flight schedule and documents which type and how much ordnance was expended, by whom, on which date and on which event.

It is a small, one-page configuration that you will find very handy. The only fields on it are the date, the type of ordnance, the amount expended, by whom, and the event. As the SDO records the ordnance expended on the flight schedule, the code sends that information to this file.

You can use this configuration to answer questions such as, "Who has not dropped a WALLEYE yet?", or, "Who has already dropped a ROCKEYE?". You can total all the ordnance by type that was dropped in a specific period. For example, when the Wing wants to know how many rounds of 20MM you expended in April of last year, you can tell them without going through last April's smooth flight schedules. Go through this configuration in three minutes with the Query utility and you will have the information.

You do not have to make any entries to this file, since the coding makes them automatically. If for some reason a pilot drops some ordnance that is not on the flight schedule, then you can easily input the information. Let us say one of your pilots went on a two-day CAG det by himself. He dropped 9 MK 76's each day and then came home. Just input the date, the type, "MK 76", the amount, "9" for each date, and the pilot's name. If he was on another flight schedule, you can put down the event if you want, or even make a note to let you know later that this ordnance was delivered outside normal squadron activity. This procedure is NOT meant to be used when half

or all of the squadron goes on a det. SIMS makes other provisions for those cases, which are covered in Chapter Six of the User's Manual.

This configuration has the ability to hold 10,000 records. That means that you can have 10,000 different ordnance expenditures at one time in this file. In other words, if a squadron had 20 pilots and each pilot expended one type of ordnance per day, this file would last you for 500 days. With average fleet use, you should be able to get around two years worth of ordnance expenditures in one file.

Indexed Fields:

* Date
* Type
* By
* Event

It is one multiple index.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

The index for this file was designed specifically to allow you to check for a certain type of error that this configuration is susceptible to. The error is as follows: when the SDO makes his entries in the flight schedule, the system reads the Ordnance Expended windows and enters the information in this configuration. Should the SDO go back and make an edit to an already-saved flight schedule event, and NOT CHECK THE BLOCK THAT ASKS HIM IF THAT IS WHAT HE IS DOING, the system will go right ahead and enter the same information again into this configuration. You will have duplicate records. To fix that, you simply print all the records out periodically with the Query utility, using the index as your format, and look them over. Cross out any duplicate records you see. Then go back into the configuration and delete them. Make sure you only delete one set of the records. Do not take both out.

4.5.3.3 Weapons Training Plan

Title: Weapons Training Plan

Header: WEAPONS TRAINING PLAN

Configuration Purpose:

To provide the WTO with the ability to plan and document his overall training plan.

General Description:

This configuration is designed to help you plan out your Weapons Training Plan, probably for the turnaround training cycle. The configuration has several pages, but is organized according to the way you normally plan training events.

The first part shows you a calendar, laid out in horizontal fashion. This type of format will give you a good perspective on your overall plan. You will note the EVT# window on the left, and the months as headings to the right.

Use this first "Yearly overview" portion to put down all of your events. You can put them down in any fashion you choose. One way is to enter them like, "<---1--->", and enter the number "1" in the EVT# window in the Big Picture section. You could also enter the event number under the column provided down the left side of the page, just draw the lines like, "<----->", and then put the event number below.

You want to conserve the records you have in this configuration, and you want to make sure that you put all your "horizontal monthly entries" on the same record. This lets you get the overall picture. You do not want to put different event lines on different records. You will not be able to see how they interact. Use only one record to display your horizontal events, and then use the other records to track the events you entered on the first record.

However you decide to make your entries under the monthly categories, enter the corresponding event and its dates in the Big Picture category. Each entry you make here should be one record in your database. As you enter

one event, step to the next page, enter that same event on the top window, and then enter one particular topic you want to cover for that event. Follow by entering how you intend to cover that topic, and enter any particulars for that topic.

If you have more than one topic for an event, you should make another record. For example, let us say that you will pan to have the CTPI in September. You enter that on the calendar, and then enter a period preceding the CTPI and note that event as "CTPI PREP". Under this CTPI PREP event, one topic you want to cover is a lecture on ROCKEYE. Enter "ROCKEYE" in the "topic you want or need to cover during that time frame" window, and "LECTURE" in the "How will it be covered" window. Then step to the next page and enter "FUZING", if you think the fuzing should be particularly stressed. Next, press the SAVE RECORD Flex-Key and your record is saved. Now go to the event window on the first page again and enter "CTPI PREP", go to the next page, enter "CTPI PREP" in the top window and "WALLEYE" in the next window. Continue on with your topics until you plan out each event.

The third page in the configuration asks you if you will expend any ordnance for the event you are planning. Here is where you can make long-range ordnance requests for the particular events on your training plan.

Lastly there is a section to enter any individual who might need a school in conjunction with the event you are planning. For example, if you intend to plan a LAWES _ syllabus for the squadron and want two pilots to go through the entire school, then enter them here.

Do not get too detailed with this configuration. It is not intended to help you make out a lecture outline or specify every move you will make six months from now. It should just help you look downstream a long way to make general plans for the big events.

This configuration has the ability to hold 500 records. You should conserve your records here, making sure that you have all the horizontal events depicted on one record, while the individual events fill the subsequent ones. For more complete directions on how this is accomplished, read the configuration description for the OPERATIONS TRAINING PLAN CALENDAR. It gives you the basic method and philosophy you need to make the best use of your records.

Indexed Fields:

* EVT#
* Event
* From Date
* To Date
* Topic
* particulars
* Type (ordnance)
* School Req'd
* School start date

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

With some practice with the Query utility, you can get some very well-categorized information from this configuration that will help your planning and organization.

You can print out the type of ordnance you anticipate requiring, the dates, and the events for that ordnance. You can output any schools you will need and the individuals who must attend. You can output the events, then next to thos events each topic you want covered, then next to each topic what should be covered in particular. It will organize your efforts to the point where you just hand the training officer a printout and you are finished with your training plan.

Do not forget that you can store this plan and its events in the system for the next WTO to use as a reference so that he does not have to re-invent the wheel when it comes time for him to do his own training plan.

4.5.3.4 Tactical Publications File

Title: Tactical Publications File

Header: TACTICAL READING LIST

Configuration Purpose:

To provide a documentation tool to the WTO enabling him to maintain a list of pertinent tactical publications.

General Description:

This configuration is a small, one-page database that helps you store the squadron's tactical reading list titles. Use it to help you fulfill the requirements now established in current ADMAT instructions that require you to keep some sort of reading list.

Very simple to use; you just enter the title of your selection, like "AIR WAR IN NORTH AFRICA", the publication where the title can be found, like "SOLDIER OF FORTUNE", and the topic of the selection, like "ACM WITH MIG-21's". The Index/Location window is intended for individual squadron use. You can specify where to find this title, say with the intelligence officer, or in the squadron safe, or in your own WTO Tactical reading folder. Make any remarks concerning the selection, enter the date when you first made the entry, and save the record. That is all there is to it.

This configuration has the capability to hold 300 records, which means that you can store 300 different titles.

Indexed Fields:

* Title
* Publication
* Topic
* Index/Location

All are single indices.

File Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You can use this configuration to put out a reading list if you want. Just use the Query utility to print out the title, the publication, the topic, and the location. Set it out in the squadron and if anyone is interested in tactical reading, they can know what is available.

Another way to use this configuration is to enter the name of your squadron in the Index/Location window and enter your name and squadron's FPO address in the remarks section. Then when you have a healthy tactical reading list built up, send the file into the Wing, which will collect all the files. They will send you a compilation of every squadron's tactical reading list, and you can contact that squadron if you see something worth further investigation.

Also, when you do add a new title to the list, inform all pilots by going into the Operations Department mailbox and entering the message, addressing it to "ALL PILOTS".

4.5.3.5 Tactical Operations File

Title: Tactical Operations File

Header: TACTICAL OPERATIONS FILE

Configuration Purpose:

To provide the WTO with a documentation and planning tool to plan for and record the tactical operations anticipated and completed by the squadron.

General Description:

This configuration was designed to help you optimize your plans for upcoming tactical operations. In so doing, it will also document those operations the squadron completes, and track bulletized "lessons learned", plus ideas for future tactics.

The configuration has three parts. The first takes general information on the specific operation you are planning, the next lets you specify particular squadron objectives for that exercise, and the last helps you document the tactics employed, the lessons learned and future ideas.

The configuration starts with the Date of Entry window. Enter the date that you make the entry, not the date for the planned operation. Enter the type and date of the operation, its location, the point of contact, and any references. For example, you are planning a CAS operation at 29 Palms in August. It is now May. Enter the date in May in the first window, enter "CAS" in the type of operation window, and the August date in the date of operation window. Enter "29 Palms" in the location window, and enter "3rd MARINE BATT" as the POC. Enter the appropriate CAS instruction as the reference in the reference window.

The second part of the configuration deals with particular squadron objectives. it first asks you if there are any pilots that should have priority in scheduling for this particular event. You should check the Greaseboard report, or run your onw PMA Expiration report to determine who will expire in a particular category to make the best estimates of which pilots will need this operation. You do not have to enter anything in these windows if you want. They are just provided for you to be able to have an input

to the scheduler that helps you with your overall weapons training for the squadron.

Next, enter any particular objectives that you feel the squadron needs to accomplish during this exercise. For example, if it is a CAS exercise, you could specify that you wanted ACM after the CAS route, or KC-135 plugs that you have arranged separately.

The third page asks you to briefly fill in the tactics employed and any lessons learned from the completed operation. Enter them as the flight crews finish the exercise. Also include ideas for the next time the squadron has this type of operation. They will easily be called up and will help to improve your performance the second time around.

This last part of the configuration should take on more importance than the community now attaches to post mission debriefings. If the community conducts half-hearted, sketchy debriefs, we condemn ourselves to repeating the same mistakes. This configuration will help you concisely itemize and store the lessons learned that are garnered from each mission by the flight crews. Use it well, and wisely.

This configuration has the ability to hold 100 records. This means that you can store information about 100 different tactical operations.

Indexed Fields:

* Date of Entry
* Type of Operation
* Date of Operation
* first line of bullets
* first line of ideas

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

A possible use for this file would be for the Wing to collect every squadron's database, collate them all, and distribute them to all the squadrons. This would provide current reference to tactics employed for a variety of exercises and operations, plus the attendant lessons learned. If the Wing does decide to do so, you should make sure that your records are of solid tactical substance. You do not want entries such as, "WE FLEW IN, BOMBED THEM TO DEATH, THEN FLEW OUT AGAIN." Though admirable, it does not contribute to the learning process for the squadron.

Keep in mind the the records you enter will be accessed, if not by other squadrons, then at the least by future generations of squadron pilots. They can draw on years of accumulated tactical expertise with this configuration.

Delete those records that you feel no longer contribute to the learning curve in the squadron, and keep those that you feel contain particularly insightful commentary.

4.5.3.6 Tactical Manual Program

There is work in progress now to automate portions of the Joint Munitions Effectiveness Manuals [JMEMS]. This project is under contract. The SIMS has a provision to call this program, when it is completed, from the WTO menu. At the present time, the program is not installed.

4.5.4 Schedules Officer Configurations

4.5.4.1 Schedules Officer Wheelbook

For the complete description of how this database works, see the configuration descriptions for the OPERATIONS OFFICER WHEELBOOK configuration.

4.5.4.2 The Flight Schedule

This configuration is described in section 4.4.9.

4.5.4.3 Flight Simulator Scheduling

Title: Simulator Scheduling

Header: FLIGHT SIMULATOR SCHEDULING

Configuration Purpose:

To provide the Schedules officer with the ability to schedule flight simulators and document those completed.

General Description:

This configuration will help you keep track of those simulators scheduled and completed. It is a one-page configuration that is easy to use and very handy to have.

The configuration has two parts; the Scheduled simulators and the Completed simulators. They work to document different phases of the same event.

When you want to schedule a simulator for a pilot, go into the configuration and enter the date the simulator will be flown. Enter the last and first name of the pilot in the Flight crew windows, and the simulator type for which he is scheduled. Enter the scheduled start and end times, and the particular mission, if any. Then include the specified instructor for the simulator if known. For example, if it is an NCLT, you would want to include the name of the LSO scheduled to give the training.

When the simulator has been completed, either you or the flight crew can come back to this configuration, call up the proper Scheduled record, and fill in the bottom portion, the Completed data. Whether the Schedules officer or the flight crew fills this in is up to the squadron.

This configuration has the ability to hold 300 records. This means that you can store and report on 300 simulator events from this file.

Indexed Fields:

* Date (Scheduled)
* Flight crew Name
* Simulator Type (Scheduled)
* Date (Completed)
* Simulator Type (Completed)

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You can use this configuration to fulfill a variety of requirements that concern simulator scheduling and completion.

You can use the Query utility to print out those simulators scheduled versus those completed, the completed flight times, or the simulators completed by type, and then total the times. Use the configuration as best suits your needs.

4.5.5 Nuclear Safety Officer Configurations

4.5.5.1 NSO Wheelbook.

For the complete description of how this database works, see the configuration descriptions for the OPERATIONS OFFICER WHEELBOOK configuration.

4.5.5.2 NSO Training/Billets Assigned

Title: NSO Training/Billets Assigned

Header:NUCLEAR SAFETY OFFICER TRAINING/OTHER DUTIES ASSIGNED

Configuration Purpose:

To provide a documentation tool that helps the NSO meet the requirements set forth in current ADMAT instructions pertaining to his billet training and the other duties to which he is assigned.

General Description:

This configuration is a repository for you to document the training you as the NSO have received, so that you can meet the requirements for that documentation when it comes time for the ADMAT. The configuration also has a provision for you to document the other duties you are presently assigned, as that information is of interest to the inpsectors, too.

The first part of the configuration asks for a type of training, the date you received that training, and any remarks you might want to make. The second part asks you to enter the other duties you are assigned, in addition to being the NSO.

This configuration has the ability to hold 25 records. You should not need any more than that.

Indexed Fields:

* Type of Training
* Date
* Billet Title

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You should keep in mind that this configuration's records are "individual-dependent", which means that the records in the configuration depend on who is the NSO at the time. You should make sure that when you leave or when you take the NSO job, this configuration is "empty" of records.

4.5.5.3 Nuclear Safety Council Meeting

Title: Nuclear Safety Council Minutes

Header: NUCLEAR SAFETY COUNCIL MEETING

Configuration Purpose:

To provide a vehicle for the NSO to schedule and document accomplished NSC meetings.

General Description:

This configuration was intended to function just like a combination appointment book and minutes file, customized for the NSC meeting. The configuration has three parts. The first deals with the agenda of scheduled meetings, the second deals with the minutes of completed meetings, and the last deals with resolutions or recommendations.

When you want to schedule a meeting for the NSC, go into this configuration and enter the date when you want the meeting to convene. Then enter the general topics for that meeting; beneath each general topic, enter the specific topics you need to cover. Save the record and you have just scheduled a meeting.

When the meeting convenes, you can call up the record for that date and see what you intended to talk about. Enter the date the meeting is held. As the meeting progresses, enter the general topics that come up, along with their specific topics. Save the record, and you have just documented the NSC meeting.

This configuration has the capability to hold 60 records, which is enough to schedule and document 60 meetings.

Indexed Fields:

* Next meeting date
* Date meeting held

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You should be aware of the classification of the content of your NSC meetings. If they are classified, you can probably only use this configuration when it is in place on the squadron's Zenith computer, unless your personal computer is Tempest-Approved. If you have to ask what Tempest-Approved means, your computer is not.

4.5.5.4 PRP Assignments and Evaluations

Title: PRP Assignments/Evaluations

Header: NUCLEAR SAFETY BILLET ASSIGNMENTS/PERSONNEL EVALUATIONS

Configuration Purpose:

To provide the NSO with a documentation vehicle to accurately track the status of the PRP program, and to maintain documentation on individuals that perform work peculiar to the NSO's area of responsibility.

General Description:

This configuration should be used to track the individuals who work in the PRP program. It has room for your personal assessment and the Gunner's assessment of the individual, and areas to document his removal from the PRP if required.

The configuration asks you for the billet of the individual, his name, the date he was assigned to that billet, and if he is PRP approved. It then has room for your personal assessment, followed by the Gunner's comments. If an individual has been removed from a particular billet, then make the appropriate note in the windows provided. If he has been removed from the PRP altogether, enter that in the window for that purpose. (Either Yes or No)

The configuration has the ability to hold 300 records, which should be more than enough to store all the documentation on every individual in the PRP program.

Indexed Fields:

* Billet
* Name
* Date Assigned
* Date removed

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

This information is obviously highly confidential. You should therefore be discreet with your use and careful with the password to this configuration.

4.5.6 Landing Signal Officer Configurations

4.5.6.1 LSO Wheelbook

For the complete description of how this database works, see the configuration descriptions for the OPERATIONS OFFICER WHEELBOOK configuration.

4.5.6.2 Pilot Landing Grade Files

Title: Pilot Landing Grade Files

Header: LSO PILOT GRADE FILES

Configuration Purpose:

To provide the LSO with a configuration to track each pilot's cumulative landing grade.

General Description:

This is a file that stores every one of your pilot's landing grades. As you enter one of his passes in his trend sheets, the system takes the grade you give him, whether day or night, and adds it to his cumulative grade. It will display this grade each time you enter the TREND ANALYSIS SHEETS configuration.

When you first start using this configuration, you have to enter the pilot's last and first names in the windows provided. Then enter what you know to be his total day grade, his total night grade, and the overall total grade. The system will use these numbers to start off with as you continue to add new passes to the pilot trend analysis sheets.

After you first enter your pilots in this configuration, there is no further need for you to make any entries at all. The configuration will get its information from the trend analysis sheets that you will fill out on each pilot. Remember, though...you must first put your pilots into this database. The trend analysis configuration will not accept any inputs for pilots that are not entered in this configuration.

Use the Query utility to print out the pilots by grade, i.e. from lowest to highest. (The database will always index lower numbers before higher numbers, and letters alphabetically)

This configuration will hold 100 records, since the SIMS is designed to hold a maximum of 100 pilots. Each pilot will only need one record.

Indexed Fields:

* Pilot (Last Name)
* Total (Grade)

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

You should think about whether or not you really want to track your pilot's grades in a cumulative fashion. We included this configuration in the system to give you that option. Some squadrons prefer to track their pilots by line periods, however, perhaps to prevent a bad period from causing too much damage or provide incentive to keep flying the ball after a good one. If your squadron uses this method, you can use the Trend Analysis Sheets configuration to track the grades by line period.

As a suggestion, the system provides the flexibility to do it both ways. You can track the pilots' grades for a line period using the Trend configuration, while always keeping track of the cumulative grades in this configuration.

A word about starting up your configuration. When you enter a record in the Trend Analysis configuration, you need to spell the pilot's name exactly as it is spelled in the windows in this configuration, because the code looks to find the pilot's name in here before it lets you continue entering any trend sheets. So...it is important that you spell the pilot's names correctly when you enter them here.

Second point. When the grade is entered in the Trend configuration, it looks in this configuration, gets the grade here, adds it to the entered grade and divides by two to give you the new grade. For example, let us say ENS Schmackeratz gets a daytime OK. (one of the few) You enter his pass into the Trend configuration; the coding looks into this configuration, gets his previous day grade, adds 4.0 to it, divides by two, and gives you the result as his new cumulative day grade. The system then also adds the new day grade to the night grade and gives a new total

cumulative grade. What is important here is that THERE WAS A PREVIOUS DAY GRADE TO BE ADDED TO. When you first start, THERE IS NO PREVIOUS GRADE, and you would have added 4.0 to 0, giving you an average grade of 2.0. Obviously that is not how it should work. This is what you do to prevent that difficulty.

If the pilot already has an established day grade and night grade and total grade, enter them when you enter his name. If he does not, like a new guy, or if you are just starting a line period and did not keep the last line period grades, enter in this configuration the first grade that he gets the first time you start to use the SIMS. For example, let us say you are just starting to use the SIMS today, your first day at sea. ENS Schmackeratz goes out and gets his first trap, a stellar no-grade. Come into THIS configuration BEFORE you enter that pass in his Trend Sheet configuration record, and put down the 2.0 in the day grade window in Schmackeratz's record. The system will automatically show you a 2.0 in the total grade window; because there is no night grade as yet to add to the day grade. Now when you enter the pass in Scmackeratz's Trend Sheet configuration record, the system will tell you that he has a grade average of 2.0, which would be correct, so far. Hopefully he gets better.

SIMS 1.00 does not send the pilot's cumulative grades to their master files. The LSO files were designed to permit you to use them on a computer apart from the squadron, if that is your need. Because of this design consideration, the LSO files are completely self-contained, and do not access any other files.

4.5.6.3 FCLP/Bounce Priority List

Title: FCLP/Bounce Priority List

Header: FCLP PRIORITY LIST

Configuration Purpose:

To provide the LSO with the ability to outline his bounce priorities in an organized fashion to the Operations officer for scheduling purposes, and to provide a way for the scheduler to know which individuals to put on the schedule when the LSO is not available.

General Description:

This configuration had its origins in the difficulties encountered when the LSO finished the bounce period at 0130 and had to make inputs to the schedule writer for the next flying day's schedule. The problem was that the schedule writer was not at the squadron that late. This configuration provides a place for the schedule writer to come and check who the LSO says are the "high priority" players when it comes to scheduling bounce.

The configuration can also be used as a scheduling tool by the LSO while working up to go to the boat. He can plan out his bounce schedule on this configuration for several days, and then have it printed out and given to the scheduler as a good guide. He can update each day as the players improve or need extra work, and leave the update on the scheduler's desk for the next day's schedule.

The configuration is simple to use. First type in the date which you are making the entry, and then type in the date of the scheduled bounce. If you are using the configuration to schedule four or five days of periods, make this date the first date of the bounce days. Follow that by entering the highest priority pilot in the highest window. If you are using the configuration to schedule out four or five days of FCLP, and are listing the pilots by seniority, then use the priority number to let the scheduler know who needs to get the periods the most. You would then put in the minimum number of periods you want to see on the individual. If you are using this configuration to track pilot performance during each bounce period, then just list the highest priority pilot

at the top, ignore the priority number, and put in the minimum number of periods you want to see on the guy for the next day. The Date of Bounce window, above, should be the date for that next day.

The remarks section is there for your own use.

This configuration has the capability to hold 10 records, which will probably be more than enough, since you rarely bounce more than ten days in a row, and once you finish with "prioritizing" a day's bounce and the bounce period is completed, you can just delete the record. There is no need to keep more than ten, anyway.

Indexed Fields:

* first PILOT window
* first PRIORITY window
* Date

All are single indices.

Files Opened by the Configuration: None

Key Procedures: None

Software Locks: None

Special Considerations:

As an LSO, you know that your priority list is not the best advertisement in the world for those individuals highly placed upon it. It would be the professional and considerate thing to do to be discreet with the contents of this configuration.

4.5.6.4 Trend Analysis

Title: Trend Analysis

Header: LSO TREND ANALYSIS

Configuration Purpose:

To automate the Trend analysis sheets currently in use in the fleet.

General Description:

This configuration was designed to resemble the trend analysis sheets now in use as closely as possible. If you are an LSO, you are familiar with those sheets, and each category on them needs no extensive description. We will discuss how to use this particular configuration in terms of the computer, and how it differs from your trend sheets currently in use.

As the present Trend sheets started with the name and date, aircraft and squadron and ship, this configuration does also. However, you must make sure that the names you enter for a pilot match those ALREADY entered in the LSO Pilot Landing Grade Files configuration. When you do enter the pilot's name, his current cumulative grades will flash up on the bottom line of the configuration.

Once you type in the individual's name and other information, go on to his pass. USE ONE RECORD IN THIS CONFIGURATION FOR EACH PASS. To illustrate the procedure, let us take a sample pass and see how it is entered.

ENS Schmackeratz gets a Fair. "(OK)" You go into this configuration, type in "SCHMACKERATZ", then "FLOYD", and the date which he got the (OK). Enter the aircraft, the squadron, and the ship. Enter the ship like "CV64", or "CVN65". Then step down into the next section and specify whether it was a day or night pass. Say it was a day pass. Put a "D" in the little space. Then you must enter a "(OK)" in the grade window, and a 3.0 in the point value.

NOTE: THIS NEXT ITEM IS IMPORTANT.

If your pilot gets a no-count pass somehow, then you must look down at the bottom of the page and check the grades there. If this no-count pass was a day pass, you must enter the day grade that is on the bottom line in the

Point Value window. If the no-count pass was a night pass, enter the night grade on the bottom line. This is because the system needs to realize the pass did not count, and you tell it that by entering the current grade. (If you take that grade, add it to itself and divide by two, you come up with the same grade, which is what should happen with a no-count pass)

Now go on to make the comments that went with the pass. Say his comments read, "High out of turn to in the middle, not enough power in close, flat at the ramp" You would make the following comments in the configuration, realizing that you have only a typewriter to enter them with and not a pencil: "H--------" for the OT window, "---------" for the X window, "-------->" for the IM window. "NEP" for the IC window, and "B" for the AR window. Make any further comments like "Too much attitude all the way", which you could enter as "TMA" in the AW window.

Lastly, you must enter the wire and any remarks. For boarding rate considerations, the system will look at the wire window and see if there is a 0 in it. If there is, the system will think that the pilot did not get aboard, and will calculate his boarding rate accordingly. If the pilot caught a wire, then enter the wire. If the pilot had a hook skip bolter, you can decide. From where we sit, he didn't get aboard and he gets a 0 in the wire window. If you don't want to hold his boarding rate accountable for a snubber pressure problem, then just enter a number like 8 or 9. You will not confuse this with getting aboard, but to the system it will look like he did, and it will give his boarding rate a break.

Once you get to the last window, press the SAVE RECORD Flex-Key and save the record. You should note that the current cumulative grade will change on the bottom line to reflect the grade you just entered.

This configuration has the ability to hold 3000 records, which means that you can enter 3000 different passes. That means if you have twenty pilots in your squadron, you can enter 150 passes for each. That should take you through most of a cruise.

Indexed Fields:

* Pilot Last Name
* Date
* D/N

All indices are single.

Files Opened by the Configuration: Pilot Landing Grade Files

Key Procedures: None

Software Locks:

You must enter a name that matches a name in the Pilot Landing Grade Files Configuration. Otherwise, the configuration will ask you to enter a valid record I. D. and not permit you to proceed.

Special Considerations:

The real utility of entering all the passes in this configuration instead of on a trend sheet is the ability to use the power of database technology to extract information that would otherwise take you days to do with the manual trend sheets.

Using the Query utility, you can print out the pilot's name and every individual pass across the screen. If the pilot consistently has problems in the middle, or in close, or out at the start, it will be immediately apparent, because all the comments are in the same column.

The Tailhook report draws its information from this configuration, and can tell you the high player for a selected period, the boarding rates, and the other things that the Tailhook report should tell you.

5.0 GETTING INFORMATION OUT: THE REPORTS

5.1 Introduction

This section describes the reports that come with the SIMS package. Each report is described using a standard format, discussed in section 5.2.

This chapter will present the report descriptions just as the SIMS presents the reporting options to you through the menu system. Section 5.3 will discuss the SERIES reports, which are a group of reports "connected" by the SIMS because they serve one single purpose. These reports are selectable from the first report menu you encounter. Section 5.4 will describe the Flight Time reports, a group dealing with flight time information. This group is found on the Flight Time reports menu. Section 5.5 will describe the Individual reports. These are reports used by individuals to assist them in their particular billet. Some of these individual reports are the same as the ones in the series; the reason they were included in the individual reports section was to give you the convenience of running one report without having to go through the series to get to it. These individual reports are found on the last Individual reports menu.

Reports are important to any organization that depends on information to function. A squadron is no different. A squadron uses reports to tell the individuals within the squadron how it will operate for the day, for the week, or for the month. It uses reports to give everyone an idea of the status of operations over a period of time. The squadron uses reports to advise outside commands concerning its operations and status.

The SIMS has a collection of reports designed primarily to help you manage and optimize your training and operations. These reports, for the most part, are for internal use and intended to inform you about the information in the various databases. They are not intended for you to take them as a finished product and send them out of the squadron, although with some coordination among the concerned commands, these reports could be configured to resemble those now in use. They will not be printed out in message format. The SIMS will return complete information concerning reports that must be sent outside the squadron, such as the flight schedule or the Monthly Training and Readiness report, but at the present time they are not in the format currently

employed. The reason is that the expense of a printer that would permit those types of functions is slightly outside the bounds of current procurment budgets for squadrons. The SIMS will give you all the information you need for complete and accurate reports. If the report needs to go out of the squadron, see your yeoman.

For reports that stay within the squadron, the SIMS format is, we believe, quite acceptable. Each report was designed with the requirement that it should be able to be placed on the Commanding Officer's desk for his perusal. They were intended to be used in a professional environment, and all have the report title, the individual squadron's header, the report date, and the pages numbered.

Every report in the SIMS will have one or more "cover pages". These are the first pages you see after you select the report from the menu system. In most cases they give you a brief description of the report, and then ask you for particulars concerning the information you need, such as dates or where you want the report to be output. All the reports give you the option of output to the screen or to the printer. Generally, a good policy here is for you to output reports to the screen first to see if you can get the information you seek. If you find that you need a hard copy, run the report again, selecting the printer option. (Some reports in the Monthly Training and Readiness series were designed to go to the printer. If you output them to the screen, it will be a quick rush of numbers.) The Greaseboard and Monthly Training and Readiness reporting series both have cover pages two to three "screens" long. These describe the report series to the user, giving him the option of continuing with the series or aborting the sequence.

As we said previously, some of the reports designed to be included in a series are also accessible through the "individual reports" menu. At the end of these reports you will be asked whether you wish to continue with the series or not. The 'series' it refers to is the one that contains the report originally. If you came into the report from the individual reports menu, you probably just wanted to run that single report; you would answer by aborting the series. If you continue with the series, the SIMS will take you to the next report in that particular sequence.

Each report in the SIMS package has several sections to it. The "Header" section outputs the basic information like the squadron's title, the report date, the report title, and the page number. The next section is the "Subheader", which is used to provide headings for the

particular categories in the report. The next section is the report "Body", which outputs the repetitive information contained in each report. The report then has a "Subtotals" section that subtotals certain fields within the "Body" section, and the "Totals" section, which then totals certain fields from the "Subtotals" section.

The reports that come with the SIMS package were designed to meet all the reporting requirements for a fleet squadron's Operations department. These reports are standardized and formatted; no options exist within the squadron to alter the format of the reports. Should you desire to go further into your databases and create your own reports with your own formats, the SIMS provides you that flexibility with the Query utility.

The Query utility is just that; a utility, a tool for you to use to extract information from any database in the SIMS. The Query utility ("Query" for short) is very simple to use, requiring only a few keystrokes, but very powerful and very handy. Query can help you with the ad-hoc questions that come down from on high like,"tell me all the pilots who flew between the 4th and the 17th of March who had special instrument cards and birthdays in December."

5.2 Report Description Format

For your convenience, we have developed a format in which to describe each report. Using the format, you will know just where to look within each report description to find what you need. Each category in the format is described in this section.

Purpose:

This part describes the intended purpose for the report. It tells you if it was designed to meet an existing report requirement, such as the Monthly Training and Readiness report series, or if it was designed specifically to help manage or track information for your own benefit, such as the OPTAR Tracking series.

Questions it can answer:

This part is titled the way it is because a good way to tell you about what the report can do is to tell you what questions the report can answer.

Required Information:

This section describes the cover page of each report, telling you what questions the report asks of you before it runs. Most reports in the SIMS ask you for one or another type of date, such as a date "that someone will expire in a particular category", or beginning and ending dates for flight time summaries. Other reports ask you for different items. This part in each report description tells you what they are.

Where the Report Gets its Information:

This part is included so that the reporting functions do not appear to be so mysterious. It will tell you which configurations (if you have a question about what a configuration is, see Chapter Four) the report goes into to get its information. It will help you to know where the information originates; if you suspect faulty or inaccurate data, you know where to check.

Report Index:

This part of the description will tell you how the report will arrange the selected information. For example, some reports output their information by pilots, alphabetically. Others list pilot information by seniority. Where squadrons typically have reports that list pilots by seniority, the SIMS has attempted to do the same. In reports used for other purposes, the SIMS will output pilot names alphabetically. The Flight schedule report will output the report by Date and Event. This means that all the flights for one day will be presented, and those flights will be arranged by event, with event one first. In this part of the description then, it would simply say, "Date and Event".

Modifications to the Database:

This part of the description format will tell you if the report modifies any data in the configurations after it runs. For example, after the Liberty Elite report is run, it updates the training and readiness figures, writing them into the System Daily file, providing the squadron with an accurate, up-to-the-minute picture of their combat readiness numbers.

How it Ends:

This part describes the choice you have at the end of the report. You will be able to run the report again in some reports, or continue on to the next report in the series in others, or you will need to press the RETURN key to go back to the menu system in others.

5.3 Series Reports

5.3.1 Greaseboard Series: Introduction

The Greaseboard series of reports was designed to assist several members of the Operations department. It will give the Operations officer an up-to-date status of overall operations. It will give the Training officer information on training and qualification expiration dates. It will give the Schedules officer information on total times and traps over a period, snivels, and output the day's entry from the weekly training plan to assist him in writing the schedule. All these combine to give an accurate, up-to-the-day status of the Operations department.

The name is indicative of the contents of the series. Most Operations departments currently track their training and flight information on greaseboards, giving them instant, "look up and see" access to their information. The officers consult these greaseboards when planning out a day's flight schedule, or next week's training plan, or a future training detachment. This series of reports was designed to be run by the Ops yeoman at the beginning of each day, providing you with the same instant access to the information. (without the need to manually put it on the greaseboard)

The series is a collection of five reports. They are listed below. You can run them one after another or individually.

1) Expiration Dates for Officer "Background" Qualifications.

2) PMA Qualification Expiration Dates.

3) Total Times/Total Traps.

4) Snivel Log.

5) Weekly Training Plan.

The Operations or Training officer should specify to the Ops yeoman how they want the reports configured. You

can require a standard "three-day look-ahead" policy on those reports asking for expiration dates, or select a different period of time for different occasions. These reports were designed for you to use as best suits your needs. Run a report to the screen as often as you like. When you have the information in a form that you find most useful, print it out using the printer option.

5.3.1.1 Expiration Dates for Officer "Background" Qualifications

Purpose:

To return the names of those officers whose background qualifications will expire on or before a date selected. These background qualifications are those such as the NATOPS check, the FLIGHT PHYSICAL date, the INSTRUMENT check, DWEST, etc.

Questions it can Answer:

This report can answer questions such as:

"Who needs a NATOPS check next month?"
"Before we leave for cruise on 1 August, who needs an instrument check?"
"Who has had Fire Fighting in the last six months?"

....and any other questions you may have dealing with these dates. The report will not tell you expiration qualifications for a specific pilot; for example, it will not answer a question such as.."Tell me when ENS SCHMACKERATZ will need a NATOPS check." You can get that kind of singular information from the specific pilot's master file easily.

Required Information:

The report first asks if you would like to continue with this report, go on to the next report, or abort the series. The beginning letter of each choice is in parenthesis, which signifies the letter you should enter to obtain the result. For example, if you wanted to go to the next report in the series, skipping over the background qualifications report, you would enter a "G" in the window and the SIMS would take you to the next report in the series.

If you decide to continue with the series, the report will then ask you to enter the selected date the report will use to look through your database. If you want to find out who needs NATOPS checks next month, then enter the date for the last day of next month. The report will

tell you every pilot who will expire in NATOPS (and any other categories) before that date.

The report then asks if you want the output to go to the printer or the screen. If you are running this report to place on someone's desk, run it to the printer. If you are looking for one specific piece of information, then run it to the screen. Use this option as best suits your needs.

Where the Report gets its Information:

This report searches through the pilot master files to obtain the necessary information. You could do the same thing with the Query utility, but it would take more time.

If you are looking for expiration dates on a particular pilot, simply go into the pilot's master file.

Report Index:

The report outputs pilots by seniority. (Lineal number)

Modifications to the Database:

If you decide to continue with the series, the SIMS will take you to the PMA Expiration Dates report. This PMA report gets its information from a transfer file that must be cleared before the PMA report functions. When you choose to go on to the next report, or at the end of the Background report choose to continue with the series, the SIMS will automatically clear this transfer file for you, erasing the data in the transfer file. You will see some lines of code print out on the screen, indicating the file is being cleared. Once the file is cleared, the cover page for the PMA report will appear. It will ask you if the transfer file has been cleared. Since you would be coming from the background report in this case, you would enter "Y" in the window.

How it ends:

The report will ask if you desire to continue with the next report in the series or abort the series now. Enter your choice.

5.3.1.2 PMA Qualification Expiration Dates

Purpose:

To return the names of those officers whose PMA training qualifications will expire on or before a selected date. These qualifications are the ones in the training matrix, such as ACM III, or DAY BOMB, etc.

Questions it can Answer:

This report can answer questions such as:

"Who will expire in ACM IV tomorrow!"
"What will ENS SCHMACKERATZ need in three weeks?"
"For the ADMAT on 1 July, tell me how training will stand if we didn't fly anymore until then."
"Who should I send on this DAY BOMB hop this afternoon?"

Required Information:

In order for the report to present you with accurate data, it must clear a transfer file every time before it runs. The report will ask you if the file has been cleared. If you are coming from the Background Qualification report, then you have already seen the transfer file cleared, and you would enter a "Y" in the window. If you are coming into this PMA report from the individual reports menu, the transfer file will not have cleared, and you must enter "N" in the window. Go through the next windows and if you elect to continue the report, the transfer file will clear. After it clears, it will bring you back to this same cover page. Now you can enter a "Y" in the window, because you have just finished clearing that transfer file. Then go on to the next window.

The next window asks you for the selected date. The report will output those officers whose training qualification dates will expire on or before this date. Here is where you use the power of the report to answer your specific questions. If you need to know who will expire in a category tomorrow, enter tomorrow's date. If

you need to know who really needs to go on the CAG's Coordinated Strike hop coming up in three weeks, enter that date.

The final window asks if you wish to continue the report, go on to the next report in the series, or abort the series now. Enter your choice.

Where the Report gets its Information:

This report is actually a combination of two reports in one. The first, PART I, will go through the pilot master files and report on those pilots who expire in training categories based on the selected date. It will send that information into the recently cleared transfer file. The second portion of the report, PART II, will report on this newly-filled transfer file. This transfer file is the same one the Training officer has available to him on his Training officer menu. Each time this report is run, it fills it up again. (If you are the Training officer, you should make sure you run this report with a date you select before you go into that transfer file database. The pilots and categories will change according to the selected date.)

Report Index:

The report is indexed by the PMA category that expires. It will print the PMA category that occurs first, alhpabetically, and alongside that category the names of the pilots who will expire on or before the date selected in that category. These pilots are listed alphabetically also. You will see a listing such as:

ACM I

ANDOLINI
BRINDISI
CAPOCHELLI

ACM II

ANDOLINI
LICCIARDELLI
SCORCHESI

etc.

Modifications to the Database:

Once you run this report, it clears the transfer file and inputs new names and categories based on the date you selected. These names and dates remain in the transfer file until the report is run again.

How it Ends:

The report asks if you would like to continue with the next report in the series, or abort the series now. Enter your choice.

5.3.1.3 Total Times/Total Traps Report

Purpose:

To return flight time and trap information on all pilots for a selected period of time, or cumulatively up to the current day.

Questions it can Answer:

This report can answer questions such as:

"Who has the most flight time in the squadron?"
"Who has the most flight time in type?"
"Who has the most traps so far?"
"Who has the most night traps?"

Use this report to supplement the information received from the Periodic Flight Time Summary report. That report only tells flight time information between two selected dates. Since most squadrons also put overall flight time and trap totals on their Monthly Flight Summaries, you could include data from this report if anyone is curious.

Required Information:

This report gives you an option at its beginning. You can select one of two choices, based on your needs at the moment. If you select the Option One, the SIMS will take you to the Periodic Flight Time Summary report. If you select Option Two, the SIMS will take you to the Total Times/Traps report.

Option One is for those who want information concerning total flight times and traps between two specific dates. If this is the type of information you are looking for, see the report description for the Periodic Flight Time Summary report in section 5.4.1. Option Two is for those who want cumulative total times and traps. This option is more fully described here.

After you select the option for the report, it asks you if you want the output to the printer or the screen, and then asks if you want to continue the report, go on to the next report in the series, or abort the series. Enter your choice.

Where the Report gets its Information:

The Total Times and Traps report goes into the pilot master files to obtain its information. It looks primarily in the first "page" of that configuration for each pilot to report on the totals requested in this report.

Report Index:

The report outputs its information by pilot, and lists the pilots by seniority.

Modifications to the Database: None

How it Ends:

The report asks if you would like to continue with the series or abort the series now. Enter your choice.

Special Note:

You will see a field in this report for the pilot's current Landing grade. Unless the LSO keeps these fields updated, they will be inaccurate. There really is no need for the LSO to update these fields. Pilot landing grade information is available from other LSO configurations. This field was included to accomodate subsequent versions of the SIMS. Ignore it now, if you wish.

5.3.1.4 Snivel Log Report

Purpose:

To return all officers who have snivels entered in the snivel log configuration for the selected day.

Questions it can Answer:

The report answers the following question:

"Who is sniveled for today, and for when?"

Required Information:

The report asks if you want the output to go to the printer or the screen, then asks for the selected date. This is the date for which the snivels will be reported. You will then select whether you want to continue with the report, go to the next report in the series, or abort the series now. Enter your choice.

Where the Report gets its Information:

The report gets its information from the Snivel Log configuration.

Report Index:

The report will output the snivels based on the date you selected, and after that, the order in which the snivels were entered.

Modifications to the Database: None

How it Ends:

The report asks if you would like to continue with the series, or abort the series now.

5.3.1.5 Weekly Training Plan Report

Purpose:

To output the weekly training plan information in a format that permits you to view all the scheduled events together.

Questions it can Answer:

This report outputs the information entered in the Training officer's WEEKLY TRAINING PLAN configuration. It will thus answer questions that information usually satisfies.

Required Information:

The report first asks if you would like to continue, go to the next report in the series, or abort the series. Then it asks for the beginning and ending dates of the report. The report will put out the planned training events starting with the beginning date entered, and ending with the ending date entered. The report will then ask where you want the output.

Where the Report gets its Information:

The report gets its information from the WEEKLY TRAINING PLAN configuration, usually maintained by the Training officer. Although the report (and the configuration) is entitled "Weekly", you may use it for any period of time you desire. If you are able to plan more than a week in advance, by all means do so, and use the configuration to help you. If you want to plan out a Fallon detachment, use the WEEKLY TRAINING PLAN configuration to enter your scheduled events, then use this report to print out the proposed schedule for the Operations officer and/or CO to edit.

Report Index:

The report outputs its information by date, and then by event. This means that if you want a weeks' worth of information, you will get it arranged by date. Within the same date, you will have the events arranged in order, with event one first.

Modifications to the Database: None

How it Ends:

The report advises you that this is the end of the Greaseboard series, and asks you to press the RETURN key to return to the menu system.

5.3.2 Monthly Training and Readiness Report Series

5.3.2.1 Introduction

This series of reports was designed to gather all the information from various SIMS databases required to complete the Monthly Training and Readiness report. Although it will give you complete information, it is not output in usable message format. Combine the information provided by this series of reports to make the "smooth" report that you will send outside the squadron.

The series consists of the following reports:

1) The Liberty Elite report

2) The Simulator report

3) The Flight Hours Expended report

4) The Monthly Training and Readiness report (PART I)

5) The Monthly Training and Readiness report (PART II)

The first report updates the squadron's current readiness data. The second and third gather data you will need to fill in on the "smooth" report your yeoman makes up. The last two are large reports that access configurations designed to contribute to these reports, in addition to calculating specific flight time information.

5.3.2.1 Liberty Elite Report

Purpose:

To return complete training and readiness numbers based on current training status of all pilots. To input the data into the squadron's DAILY FILE configuration, providing a method to view the squadron's readiness figures on a daily basis.

Questions it can Answer:

This report was designed to address the following specific points:

"By seniority, the name and PMA point totals in each PMA category."
"The number of pilots over 75% in each category"
"The percentage of pilots over 75% in each category"
"The mean percentage (the average total) for each category"
"The Weighted Percent Mission Capable number"
"The Weighted Mean Percent Mission Capable number"

Required Information:

The report first asks you for the number of flight crew you are reporting. Enter the number of pilots your squadron is obliged to report. For example, you would obviously count all your own squadron pilots in this number. If your squadron is also responsible to fly someone like a CAG LSO, and is tasked with reporting that individual's training accomplishments, then he too must be included in that number. If your squadron flies the Chief of Staff, or others not assigned to the squadron that do not require you include them in your reporting numbers, do not include them in this number. Even though those individuals are in your pilot master files, the SIMS uses a small coding procedure to "weed them out" when it reports on your training and readiness status.

The report then asks you to direct the location of the output, and specify the report date. This report date is very important. Based on this date, the squadron's readiness will be calculated. For example, if you want to find out your squadron's readiness figures today, enter

today's date. If you want to use this report to find out what the squadron's readiness figures will be three weeks from now, (with no further flights added in, of course) enter the date three weeks hence.

The report then asks if you would like to update the squadron's readiness figures with this report. A "Y" will send the results of the Liberty Elite report to the SYSTEM DAILY FILE, a configuration designed to store the squadron's current readiness figures. Accepting the default "N" will not update that configuration. If you are running this report using the present day's date, it is probably a good idea to enter a "Y". The SIMS will save the updated PMA numbers for the entire squadron to the SYSTEM DAILY FILE configuration. It is also strongly recommended if you are running this report as the first in the Monthly Training and Readiness reporting series. It will update a configuration which will later be accessed by another report. You should have the current readiness numbers in the SYSTEM DAILY FILE when you run that report. (The Monthly Training and Readiness Report 1)

If you are running the report as a speculation on possible future status, then it would be wise to accept the default "N" here. You would not want speculative data to reside in a configuration that is supposed to reflect current, real numbers. Use your best judgement. If for some reason you mistakenly send the results of this report to the DAILY FILE configuration and you realize you do not want those numbers, simply run the report again with the current day's date as the report date, and the system will replace your speculative data with factual numbers.

Where the Report gets its Information:

The report extracts information from the pilot master files to calculate the squadron's readiness numbers. It goes through each pilot's training category expiration dates and measures them against the input report date. If the expiration date is farther in the future than the report date, the report gives the pilot credit for the number of points that category carries in the training matrix. If the report date is greater than that categories' expiration date, then the category has expired and the pilot gets no points for that mission field. (The SIMS internally changes all dates to Julian dates for comparisons)

If the report sees the letters "NSP" in the pilot category field of a pilot's master file, it will not go through this procedure.

Report Index:

The report outputs pilots by seniority, using the Lineal Number field in each pilot master file.

Modifications to the Database:

As was mentioned, you can select whether you want the Liberty Elite report to update the SYSTEM DAILY FILE configuration. If you so choose, the report will change all the squadron PMA numbers and the C-rating to reflect the most recent report. You can also choose not to have the report perform this update. If you so choose, internal coding in the report reads your selection and skips over the part in the report that saves the new information to the SYSTEM DAILY FILE configuration. (This configuration is only described in the System Manager's Reference Guide)

How it Ends:

The report asks if you would like to continue with the series or end it now. Enter your choice.

5.3.2.2 The Simulator Report

Purpose:

To return the number and type of simulator hours flown by the squadron within any two selected dates.

Questions it can Answer:

This report will answer questions such as:

"How many simulator hours did we have last month; give me a breakdown by type. I need to have that data for the Monthly Training and Readiness report in five minutes."
"How many NCLT's did we have in the last six months?"
"How many 2F111 simulators did we use last year, and what was our average flight time for a simulator?"

Required Information:

The report first asks for the "Start" and "End" dates. You should use these dates to set the beginning and ending dates of your reporting period. If you are using this report to gather data for the Monthly Training and Readiness report, then you would use the starting and ending dates for the month you are reporting. If you are looking for the number of NCLT's in the last six months, enter a starting date of six months ago and an ending date of today.

The report then asks you to direct the output, and if you want to continue with the series or abort it now. Enter your selections.

Where the Report gets its Information:

The report extracts information from the SIMULATOR SCHEDULING configuration used primarily by the Schedules officer.

Report Index:

The report presents its information according to the type first, then the date of the simulator. For each it also includes who flew the simulator and the completed time.

Modifications to the Database: None

How it Ends:

The report asks if you want to continue with the Monthly series or abort it now.

5.3.2.3 The Flight Hours Expended Report

Purpose:

To return the number of flight hours expended in each of the three categories; Training, Battle Group Operations, or Service and Support, between any two dates selected. Also, the report will total the first pilot time between those selected dates for those categories.

Questions it can Answer:

This report was designed specifically to meet the Monthly Training and Readiness report requirement to list the numbers of flight hours spent in each of the three categories mentioned above.

Required Information:

The report first asks you for the Beginning and Ending dates of the reporting period. If you are reporting for the month, these would be the first and last dates of that month. If you are looking through your records six months past, then enter the appropriate dates.

The report then asks you to direct the output and if you want to continue with the Monthly series or abort it now. Enter your choices.

Where the Report gets its Information:

This report extracts its information from the FLIGHT SCHEDULE configuration. Based on the two dates you select, the system will go through each flight schedule and first determine which category the flight was in, then add the flight hours to the respective category total. At the end, it will add every category total to give you a complete total of all flight hours in those categories for the two selected dates.

Report Index:

The report will present its information by the type of flight hour category; either TRAIN, BGOPS, or SVSPT.

Next to each category will be the total hours for the selected period, and at the completion of the report, the total for all three categories.

Modifications to the Database: None

How it Ends:

The report asks if you want to continue with the series or abort it now.

5.3.2.4 The Monthly Training and Readiness Report 1

Purpose:

To return the bulk of the flight hour and sortie information plus all PMA reporting requirements for the Monthly Training and Readiness report.

Questions it can Answer:

This report was designed specifically to meet most of the reporting requirements for the Monthly Training and Readiness report. Any questions associated or related to that topic will probably be answered by this report.

Required Information:

The first cover page in this report will simply ask if you want to continue with the series or abort it now. Enter "C" to continue on to the next cover page, or "A" to return to the menu system.

The second cover page asks a little more. At first, you must direct the output of the report. We suggest you send this report to the printer. It is not excessively long, but it does not run out on the screen well because of the particular format the designers included in the report. We felt the format would be more beneficial than seeing it on the screen in a less recognizable fashion. (You can always try it to see what it looks like; it will not hurt anything.)

Next, you must tell it the beginning and ending dates of the report period. Since this report was designed to be used as a monthly report, you would probably want to put in the beginning and ending dates of the reported month here.

Then the report asks that you input the information you obtained from the Simulator report. Strictly speaking, you do not have to enter this information for the report to run. (It will simply print out blanks in the respective area of the output.) You could leave this blank and put all the information together when you make the "smooth" Monthly Training and Readiness report. We included this option for you in the event you anticipated placing this before the CO for his review, with a requirement for all the information to be in one format and looking good. The

choice is up to you. If you do want to enter the information, however, you will need to have run the Simulator report prior to this report.

The report then asks you to enter the number of "A" status aircraft for the month. Since SIMS 1.00 does not have the maintenance department "connected" to the system yet, this information will have to be manually entered. Again, you could leave it blank and fill it in on the smooth output. The considerations for this are the same as for the above paragraph. Also, the next requirement is to enter the average number of Group IX personnel aboard. Enter these if you wish.

The report then begins to run. The format we designed was for the report to be output in "rough" message format, with certain blanks for you to fill in based on your own squadron's command structure for the addressees and the small parenthesis based on each subject's classification. You will also note that at the end of the report there is a small blank for you to enter your projected C-rating. Enter your projection for the smooth copy of the Monthly Training and Readiness report.

Where the Report gets its Information:

The report extracts its information from several areas. The main source of its flight time information comes from the YELLOW SHEETS configuration. It takes the PMA readiness numbers from the SYSTEM DAILY FILE configuration (which should be up-to-date because you ran the Liberty Elite report first, right?) and the Fly Days for the month from the Operations officer's OPS CALENDAR/TRAINING COMMENTARY configuration.

Report Index:

The report goes into the YELLOW SHEET configuration to get the flight time information based on the date. The indexing method really doesn't show itself to you in this report, as the format is an arrangement of totals.

Modifications to the Database: None

How it Ends:

The report asks if you want to continue with the series or abort it now. You would probably want to continue with it since you have to go to the next report to finish getting the rest of the data for the Monthly Training and Readiness report.

5.3.2.5 The Monthly Training and Readiness Report 2

Purpose:

To return the remaining information required to complete the Monthly Training and Readiness report.

Questions it can Answer:

This report was specifically designed to output the Operations officer's monthly commentary on the training and readiness concerns.

Required Information:

The report will ask you first to direct its output, and then ask you what month you are reporting. Although it may seem that the system should know that, (and the designers could have made the code so that was possible) to do so would have locked you into reporting only in a sequence, requiring that you first run the previously described report. It would reduce your flexibility. Since flexibility is a prime consideration for the SIMS, you need to enter the month you want reported. Enter the month in the three-letter format the military uses. Make them CAPITALS.

The "smooth" Monthly Training and Readiness report will also require that you fill in the number of flight hours expended in the training, battle group operations, or service and support categories. To get this information, you would simply run the Flight Hours Expended report described in section 5.3.2.3.

The report also requires that you fill in each classification parenthesis as required. These will probably be based on the classification of your remarks in the appropriate sections of the report.

Where the Report gets its Information:

The report extracts the information from the OPS CALENDAR/TRAINING COMMENTARY configuration, usually maintained by the Operations officer. This configuration includes the description of employment for the month, any comments on training deficiencies, revisions to the

training plan, or other remarks. The format of this report comes directly from the current LATWINGPAC Training and Readiness Manual. Because of this format, sending the report to the screen will not be as conducive to easy reading as sending it to the printer.

Report Index:

The report extracts its information from the OPS CALENDAR/TRAINING COMMENTARY configuration based on the month input.

Modifications to the Database: None

How it Ends:

The report says, "This is the end of the report. Press RETURN to continue." This is the last report in the Monthly Training and Readiness Report series.

Note: As the report prints out its information, it will pause and show a message on screen that says, "press RETURN to continue." Simply press the RETURN key to continue printing the report. This feature was inserted to give you the chance to "catch your breath" should there prove to be excessive commentary output.

5.3.3 OPTAR Report Series

5.3.3.1 Introduction

This series was designed to help the Operations officer track the OPTAR expenditures at any time during the fiscal quarter. The series consists of only three reports. They are:

1) Quarterly Flight Summary Report

2) OPTAR Tracking Report

3) Actual Cost/Mission Flight Hour Report

These reports are designed to assist in a large-scale, overall management of the OPTAR. Micro-management with these reports is possible, but probably not very desirable. Use them periodically, whenever a question comes up or is anticipated concerning the OPTAR funds.

5.3.3.2 Quarterly Flight Summary

Purpose:

To return flight information in general categories over the specified fiscal quarter. This report should be run when you have a question concerning OPTAR in conjunction with the quarterly flight times. It presents the same information as the Periodic Flight Time Summary report, (section 5.4.1) but in a format more along the lines of OPTAR concerns.

Questions it can Answer:

This report will answer questions such as:

"How many night hours did we have last quarter, and what percentage of our allocation was used?"
"How many sorties did we have last quarter?"

"Give me a breakdown by month of our day and night times and sorties; tell me what percentage in each month was that from our total allocation, and give me the totals."

Required Information:

The report first asks you to direct its output. Then it asks you to enter the report date. This should usually be the date you are running the report. Then enter the fiscal quarter you wish to report on. A small note is made that reminds you to make sure you are reporting on a quarter that presently has information in the YELLOW SHEET configuration. This is where the report gets its information; the configuration has the capacity to store 3500 yellow sheets. If, however, the squadron has just shifted the database and emptied all of the data in the configuration from last quarter, you need to be aware of that before you run this report looking for last quarter's flight data. It usually is not a problem. The configuration can store enough data for your squadron to have twenty yellow sheets a day for over five months. When you come to the end of a quarter, you will typically only be going back three months for a quarterly review.

Should your squadron invest in storage hardware that permits you to carry a greater number of yellow sheets in the system, this restriction will be meaningless.

Finally the report asks if you would like to go straight to the OPTAR Tracking report. Since these reports are only accessible in a series, you need to start at one to get to the others. This option lets you skip to the second or third report in this series. If you do not want to skip the Quarterly Flight Summary report, leave this window blank.

Where the Report gets its Information:

The report draws on three sources to get the information it needs to complete its presentation. First it opens the QUARTERLY DATE FILE configuration to tell it when the months and quarters begin and end. Then it opens the YELLOW SHEET configuration to get the actual flight time information based on the dates it obtains from the QUARTERLY DATE FILE. The system then opens the OPS OFFICER OPTAR INPUTS configuration to obtain further OPTAR tracking information. The information that this report

outputs is only as accurate as the information held in these configurations.

Report Index:

The report index is not obvious to the reader of the report, since the information is output in totals. The system takes the report through the YELLOW SHEET configuration by date, however, to get the required quarterly information.

Modifications to the Database: None

How it Ends:

The report asks if you want to continue on to the OPTAR Tracking report. If you do, enter a "Y". If you do not, enter "N".

5.3.3.3 OPTAR Tracking Report

Purpose:

To return projected OPTAR expenditures based on the last hard numbers input from the maintenance department, and the total flight hours flown since those hard numbers were input.

Question it can Answer:

This report can answer questions such as:

"How much OPTAR do we have until the end of the quarter?" "Find out how many hours we've flown this quarter up to today. Based on that, tell me what my OPTAR expenditure is, what percent of my total allocation that is, and how many hours/sorties I can fly."

Required Information:

The report first asks you to direct its output, then follows by asking you for which date you want to make the projection. You should enter the current day's date. An exception to this may be if you know the squadron will be inactive for a period of time, say after a cruise or during a holiday period. You could then enter the date on which you anticipate resuming normal operations. The projection would then tell you how much OPTAR you could expect to have when you resumed.

It then asks for the quarter you wish to project. By the nature of this report, you would enter the present quarter. You already know what happened last quarter, and you don't know anything at all about the upcoming quarter. Enter this as either "1", or "3", or whatever fiscal quarter it happens to be. Make sure you do not confuse the calendar year with the fiscal year.

You must then input your best estimate of the actual CPFH based on the missions flown since you last received the hard numbers from maintenance. For example, let us say that maintenance just gave you the actual OPTAR figure (the "hard number") three weeks ago. It is coming down to the end of the quarter, so you are looking at OPTAR rather closely. These last three weeks your squadron has been flying heavily in ACM and TACTICS flight categories. Consequently, the number you enter in this next window should be higher than the typical CPFH. You should have a good idea about how much each type of mission you fly costs you per hour. (If you know the cost of a gallon of jet fuel, the Actual Cost/Mission Flight Hour report will tell you exactly how much each of your past three weeks' worth of missions has cost in CPFH.)

Finally the report asks if you want to go straight to the Actual Cost/Mission Flight Hour report. If so, enter a "Y" here. Otherwise the OPTAR Tracking report will begin.

After the report has run, it will ask you for the number of no-fly days your squadron has left until the end of the quarter. The system knows how many days are between the projection date you entered and the end of the current quarter. The numbers you see at the end of the report output are based on the actual number of days left in the quarter. If your squadron will not be flying all of those days, the system needs to know the number of no-fly days you anticipate. At the end of the report, the question will come up on the screen. Enter the number of no-fly days you anticipate. The system will then tell you how many hours and sorties PER FLY DAY you have remaining. As

you can see, you may run this report to the screen several times and modify your projections and estimates to answer "what if" style of questions.

Where the Report gets its Information:

The report opens several configurations to get the information it needs to make an accurate projection.

It opens the QUARTERLY DATE FILE configuration to find out the exact dates for the months and quarter involved. It opens the YELLOW SHEET configuration to get the flight time information for the period specified by the dates from the QUARTERLY DATE FILE. It opens the Operations officer's OPTAR INPUTS configuration to get the other information necessary to make an accurate projection.

Report Index:

This report index is not obvious to the reader because the output is in the form of totals. Actually, the report goes into the YELLOW SHEET configuration and finds the flight information by date, according to the specified period.

Modifications to the Database: None

How it Ends:

The report asks if you would like to continue on to the Actual Cost/Mission Flight Hour report. If so, enter a "Y". If not, enter "N".

5.3.3.4 Actual Cost/Mission Flight Hour Report

Purpose:

To return information on the actual CPFH of each mission category.

Questions it can Answer:

This report can answer questions such as:

"What was our CPFH for ACM hops from the beginning of the quarter until today?"
"What was our average LBS/HR on the quarter's cross-country flights?"
"What is our overall average CPFH from the beginning of the quarter up to today?"

Required Information:

You first need to direct the output of the report, and then indicate the current fiscal quarter. Following that, enter your best estimate for the cost of a gallon of jet fuel from the beginning of the quarter until the present date. You can get that number from maintenance, or as a last resort, call the fuel farm. Then enter the reporting date. This should be the date on which you are making this report.

Where the Report gets its Information:

This report opens the QUARTERLY DATE FILE configuration to get the appropriate dates for the selected quarter, and then opens the FLIGHT SCHEDULE configuration to gather the flight times for each of the categories. Within the FLIGHT SCHEDULE configuration, it uses the field entitled FPT to ascertain the flight hours for each mission. If your SDO's are not filling that field in, you will get inaccurate data here.

Report Index:

As in the other two reports in this series, this information is presented as a set of totals. You really will not notice the indexing. As a matter of interest, the report goes through the FLIGHT SCHEDULE configuration by date and event to give you the information totals.

Modifications to the Database: None

How it Ends:

The report asks if you would like to run the report again or go back to the menu. Enter an "R" to run it again or an "M" to go back to the menu.

5.4 Flight Time Reports

These reports are those the SIMS package uses to give you information that is in any way related to flight times or flight time summaries. These reports are selected from the Flight Time Reports menu. They are:

1) Periodic Flight Time Summary

2) Quarterly Flight Summary *

3) Flight Hours Expended/Category *

4) Total Times/Total Traps *

* These reports have been described in a previous section.

5.4.1 Periodic Flight Time Summary Report

Purpose:

To return most of the information now found in squadron Monthly Flight Time Summary Reports, with the additional flexibility of being able to have that same information shown between any two selected dates. (not just for the month)

Questions it can Answer:

This report was designed specifically to perform the function now accomplished by most squadrons's Monthly Flight Time Summary Report. This report does not give pilot total times and traps, however. The SIMS Total Times/Total Traps report fulfills that function. This report can answer questions such as:

"How many traps did ENS Schmuckatelli get last month?"
"Who got the most night traps on that last at-sea period?"
"What was our night percentage of the total flight hours on the last Fallon det?"
"How many actual approaches has the XO had since he checked aboard?"

The combination of fields this report uses, along with the flexibility of picking two successive dates to establish your own reporting period, will help make this report one of your most useful tools.

Required Information:

The report first asks you to direct its output. Then it asks you to specify the reporting period by using a beginning date and an ending date. If you want this to work like your Monthly Flight Time Summary, then enter the first and last date of the respective month.

You are then asksed for any report remarks. Use this line to attach any comments you feel may be appropriate for the way you have structured the report. If you have selected the dates to show you the flight times for a particular at-sea period, then so state on this line. Some example headings would include:

"86 JAN FLIGHT SUMMARY"
"FALLON DET/12 MAY-18 JUN 86"
"FLIGHT SUMMARY FOR 1986"

An accurate heading will help you to determine just what the report contents reflect when you view them at some future time.

Where the Report gets its Information:

This report gets its information from the YELLOW SHEET configuration. The Ops yeoman will probably maintain this configuration.

Report Index:

The report will list the information by pilot, by seniority.

Modifications to the Database: None

How it Ends:

The report asks if you want to return to the Greaseboard series of reports or exit the series now. This report is integrated into the Total Times/Total Traps report in the Greaseboard series. If you entered this report from that series, anything but an "E" will take you back to that report. An "E" will send you back to the menu system.

5.5 Individual Reports

5.5.1 Introduction

This report category is intended for those officers who have the need to consistently report on information that only applies to their billet. Some of the reports in this section have already been described, since they fall in the Greaseboard or Monthly Training and Readiness report series. These reports have been included in this section to provide you the convenience of accessing the report 'individually', without having to go through a series.

Those that have not yet been described are discussed in this section.

The reports available from the Individual Reports menu are:

1) Flight Schedule Report

2) Liberty Elite Report *

3) Flight Simulators Report *

4) Actual Cost/Mission Flight Hour Report *

5) Snivels Report *

6) Ordnance Expended Report

7) LSO Trend Analysis Report

8) Weekly Training Plan Report *

9) PMA Expiration Dates Report *

* These reports have been described in a previous section.

5.5.2 Flight Schedule Report

Purpose:

To take the information within the FLIGHT SCHEDULE configuration and present it in a manner more conducive to interpretation and editing.

Questions it can Answer:

This report was designed to output the contents of the day's scheduled events within the FLIGHT SCHEDULE configuration. It will answer most questions handled now by the flight schedule.

Required Information:

This report is really just a tool for you to use to better visualize the flow of scheduled events for a particular day. It asks you to direct the output and then for the day you want reported. If you want to see tomorrow's flight schedule, enter tomorrow's date. (if the schedule is written) If you want to see last Thursday's schedule, enter last Thursday's date.

Where the Report gets its Information:

The report opens the SDO roster so that the SDO's name will go on top of the report for the day, and then opens the FLIGHT SCHEDULE configuration to report on the events for that day.

Report Index:

The report arranges the output by date (the date you select) and then by event, with event one first.

Modifications to the Database: None

How it Ends:

The report asks if you want to run it again or end it now. If you want to run it again, enter "R". If not, enter "E".

5.5.3 Ordnance Expended Report

Purpose:

To return the type and amount of ordnance expended between any two dates you specify.

Questions it can Answer:

This report can answer questions such as:

"How many MK76's did we drop last week/last month/last year?"
"Give me a breakdown of all the ordnace we dropped at the Fallon det by type and amount."
"What ordnance did we drop last year?"
"Let's get the total for the Monthly Ordnance Expenditure Report!"

Required Information:

The report asks you to direct the output and then enter the beginning and ending dates of the reporting period.

Where the Report gets its Information:

The report opens the ORDNANCE EXPENDED File to present the information.

Report Index:

The report will list the ordnance by type, then by amount. The types will be listed alphabetically.

Modifications to the Database: None

How it Ends:

You are asked if you want to run the report again or exit. If you wish to run the report again, enter an "R". If not, enter an "E".

5.5.4 LSO Trend Analysis Report

Purpose:

To show the LSO a graphic portrayal of the landing trends for one pilot or for the entire squadron between any two dates specified.

Questions it can Answer:

The report can answer questions such as:

"How come I never get any Okay passes, Paddles!?"
"What was each pilot's grade point average over the last at-sea period?"
"How come I never get any Okay passes, Paddles!?"
"How many OK's did the CO get during the last five at-sea periods?"
"What part of the pass gives Schmuckatelli the biggest problem?"
"How come I never get any Okay passes, Paddles!?"

Required Information:

The report presents you with an option. You can report on the trends of all your pilots, or on a single individual. In preparation for a major squadron bounce, you might want to preview every individual's trends over a certain period, printing them out and going over them with the individual. If there are one or two individuals who may need some extra LSO "motivation", you could print out their trends and use the trends depicted to assist the pilot in improving his landing performance.

If you would like all the pilots reported, select option one by entering a "1" in the window. The cursor will jump down to the beginning date of the report. If you want to report on one specific pilot, enter a "2" in the window. The cursor will then move to the adjacent window and accept the pilot's last name. (If you have two pilots in the squadron with the same last name, spell them differently. These names are only in YOUR LSO files, so it does not matter how you spell them as long as you can keep track of them. For example, if you have three Zambini's in your squadron, enter them in your LSO files as Zambini1, Zambini2, and Zambini3. Once you input the pilot's name go

on to the beginning and ending dates for the report period. The report finally asks you to direct the output, encourages you with some original advice, and then commences.

Where the Report gets its Information:

The report gets its information from the LSO TREND ANALYSIS configuration, where all the trend sheets are stored.

Report Index:

If you elect to report all your pilots, it will report them alphabetically. If you elect to report only one pilot, indexing doesn't matter.

Modifications to the Database: None

How it Ends:

You are asked if you would like to run the report again or exit. Make your choice.

6.0 USING THE SIMS IN THE SQUADRON

6.1 Introduction

This chapter will discuss some of the larger concerns that surround the SIMS, plus describe how you can take advantage of the flexibility the SIMS offers for your own squadron's benefit.

Section 6.2 will cover the ways squadrons can use the SIMS in their fluid operating environment. Det concerns, shipboard use, and transitioning squadrons are addressed.

Section 6.3 will discuss the Peripheral Disk Sets. The PDS are available upon request from the SIMS designers. Each officer in the Operations department may have a PDS to automate his own area of responsibility. The PDS will be completely interchangeable with the main SIMS, and the officers can use the PDS with their own personal computer.

Section 6.4 will discuss backup strategies. The backup procedures for the SIMS will be a matter of individual squadron policy. This section will address the files that need to be backed up, discuss two methods of backing up your SIMS data, and highlight concerns that surround the security of your data.

Section 6.5 will describe the optimum employment of the SIMS. The SIMS was designed to be used in a multi-user or computer network environment, and this section lays out the guidelines for setting up the environment in your squadron.

Section 6.6 suggests possibilities presented by sharing the squadron's database with other squadrons or the Wing Staff.

An automated information management system designed to accomodate the numerous complexities and fast-paced operating environment in the Fleet had better be extremely flexible. Perhaps "flexible" would be too rigid a word. It had better be fluid. The squadron will go on dets, it will go to sea; it will send two or three planes on dets and keep the main part of the squadron home. All these considerations place flexibility as the highest concern for any automation effort. Add to that the current restrictions on funded computer equipment within squadrons and it makes the task doubly difficult. With your cooperation, the SIMS can handle the job.

You must realize that the SIMS is not another program to calculate Liberty Elite data, or to keep track of the SDO roster, or a spreadsheet to watch the OPTAR expenditures. It is a completely automated information management SYSTEM. This SYSTEM must be integrated into the entire Operations department if it is to function. Not keeping the smooth flight schedule one day because the SDO "does not like computers" will hurt the accuracy of your information. Just as in every other endeavor, there is no such thing as a free lunch. You and your squadron must be committed to completely automating your Operations department functions. Using the SIMS must be the standard mode of operation. It will require the officers become familiar with their configurations. They will have to learn the function keys on their squadron terminal(s). They will have to change their concept of keeping paper files to keeping information electronically. It requires a commitment to automation and a group of officers that have the desire to automate their information management system. If the squadron officers meet those criteria, the SIMS is for you.

6.2 Squadron Arrangements

6.2.1 Introduction

This section will address questions about how to handle the operations information when the squadron goes on detachment or out to sea. It will discuss how squadrons transitioning from one aircraft to another can use the SIMS to ease the administrative burden of tracking flight time and training information for two aircraft types.

6.2.2 Detachments

Detachments (dets) come in all shapes and sizes in the light attack and strike fighter communities. They range from a small one or two-plane det to NAS Southwest for a LAWES school committment to a full-blown squadron deployment to NAS Fallon. We want to make the distinction here between a "detachment" and a "deployment".

In this manual, a "detachment" will be when a number of aircraft detach from the majority and remain a length of time at another base to perform some function. This includes such things as small ACM dets where the pilots rotate out, or small adversary detachments of three or four aircraft. It does not include static displays or flight demonstrations at some cross-country destination overnight. Basically, a detachment is any event that requires you keep certain operations-related information on aircraft and pilots for a certain period of time AWAY FROM THE MAIN SIMS DATABASE AT THE SQUADRON. We will be talking primarily about detachments in this section.

A "deployment" on the other hand is when the entire squadron picks up and goes off to another location, be that NAS Fallon or the USS Constellation. The SIMS handles deployments easily; just make sure you pack the computer when you go. More about packing up and deploying in the next section.

The procedure to handle det information must accomodate several factors. Many times small squadron dets take very few individuals because of funding considerations. These individuals are pilots and maintenance personnel. It may not be possible to take a computer along on the det; there may be only one in the squadron, or there is difficulty packing it out to the det

location. There may not be enough people to enter the required information on a daily basis.

Presently, detachments either take pre-written flight schedules or write them at the det location. The smooth flight information is kept on those flight schedules, usually in pencil because things change rapidly in a det environment. These "final" flight schedules are then taken back to the squadron and stored. The yellow sheets for each det flight are stored while on det and then taken back to the squadron for the Ops yeoman to enter into whatever system is in use to account for the flight time information.

Because of the sparse conditions usually encountered on dets, and because of the fluid operating environment, we do not suggest you take any hardware or software on det with you. The SIMS does permit accurate information accounting for the det, however, by employing the following steps:

1) Have the Training officer (or whoever is planning the det) fill out the required events in the WEEKLY TRAINING PLAN configuration for the period of time covered by the det. These entries should cover the training required, suggest pilots to receive that specific training, and delineate any ordnance, if required.

2) Have the Schedules officer write the flight schedules for the det using the FLIGHT SCHEDULE configuration.

3) After the Schedules officer has written each event and had the overall det schedule approved (he can use the Flight Schedule Report for a complete overview of the schedules) he should go back to the FLIGHT SCHEDULE configuration and print each screen that has an event on the det. For example. say the Schedules officer has written the three days' worth of flight schedules planned for an upcoming det. After these are approved, he goes back to the first days' schedule and calls up the first event for that day. He then presses the PRINT SCREEN Flex-Key to get a printout of the screen shown. This will give him a printout of the FLIGHT SCHEDULE configuration with that particular pilot's event filled in the windows. He would end up with about three to four pages per pilot per event. Do this for all the days' in the det schedule and store the printouts in a notebook. This notebook will be the rough schedule for the det.

4) When the det goes, the det SDO simply edits each page in this notebook as he would at the squadron on the SIMS. When the det returns, give the notebook to the yeoman and have him enter the edited pages in the FLIGHT SCHEDULE configuration, and then give him the Yellow sheets and have him enter them in the YELLOW SHEET configuration. (If possible, try to send some of the sheets back if the det runs for some time to alleviate a massive workload on the yeoman.)

There is only one thing that the schedule writer must ensure as he writes these det flight schedules. Since the det information will be coming back into the same data base as the regular squadron flight information, the possibility exists for him to have the same event on the same day in the FLIGHT SCHEDULE database. To preclude this, we suggest you number your det events with higher numbers. The event number field in the FLIGHT SCHEDULE configuration is a numeric field; it will only accept numbers. This makes it easier for you to index the information. Therefore the event number you enter for your det events must be numeric. Try numbering your det events starting at 70, or 80, whatever number you think will be higher than the number of events you expect your squadron to fly during the days the det is gone. Decide on a number at which you will start numbering your dets. This set number will give you the ability to go into your flight schedule data and select only those flight schedules that were dets, (all the flight schedule records with event numbers equal to or higher than the number you decide on) and so give you selective det information.

Another option will exist soon for those squadrons who would prefer to take their computational assets with them on a det. An officer going on the det may have a portable personal computer, or the squadron may decide to take its own if it has more than one. Regardless, if you want to use the SIMS software on a det, versions after the SIMS 1.00 will give you that option.

Versions after SIMS 1.00 will come with a package containing a separate set of "Det Disks". These disks consist of a small number of selected configurations that will track your flight time and pilot training, keep the flight schedule, and track ordnance expended. They will be designed to work on a two-floppy disk system. When you return to the squadron, simply unload the data from these

Det Disks into a waiting file. A separate report will give you the selected numbers from this holding file.

Of course, if an officer who has a portable computer with a hard disk is going on the det, he could easily load the entire SIMS package into a directory and use his portable computer just as it is used at the squadron. When it comes time for monthly summaries, do not forget to include the information in this separate database.

6.2.3 Deployments

The tactical jet community exists to deploy. Any automation effort designed to serve their needs should deploy with them. The SIMS does so.

The areas of concern involved when moving the SIMS are listed below:

* You must ensure your database has been backed up AFTER your last entry but BEFORE you pick up the computer to go.

* Make sure you take along more than one copy of your .FLX files AND your backed up data files.

* Ensure you have followed all procedures recommended by your hard disk manufacturer to move the disk. Most come with software routines that "park" the disk writer to a safe area on the disk.

* When you transport your disks, we suggest you MAIL a copy to your deployment location, (usually squadrons have advanced dets for deployment times) hopefully to arrive before you do at the deployment site. Then carry copies of your SIMS in separate locations as you travel to the deployment vicinity. If your transportation efforts fall afoul, you can rely on the mail system.

* Take care in transporting any hardware associated with the SIMS. This means care taken in packing specific cruise boxes, ensuring that those who carry them understand the contents. These are not books. Treat the hardware appropriately.

* When you arrive, make sure you have surge protection on your machine before you plug it in if you are operating in a location where power is questionable. (like an aircraft carrier)

* Turn your machine on. If the computer has been transported carefully you should still have your hard disk in functioning order and will have no need for your copies. Store them in a safe place.

* You can tell if you have a malfunctioning hard disk if you encounter a problem that occurs sometimes but not always. Software problems will consistently stop you dead (using the same data) but hardware problems appear as "ghosts", letting you run a program once and then not letting you run it again. If something like this occurs, you have probably damaged your hard disk in transit and will need it repaired.

* If there is no hardware problem, but the files in certain configurations seem awry, you may have to recover those files by using the Reindex utility. The system manager will have a copy of the instructions for that utility.

* Once you have moved aboard or are settled in at your deployment location, turn on the computer and use the SIMS the same way as you did at the squadron.

We suggest you give some special thought to the placement of your hardware aboard the ship. Though it is not a concern as far as operation goes, it may have an impact on the accessability of your SIMS. When the access goes away, so does the usefulness of your system.

If you use the SIMS on one single terminal, it is probably a good idea to place that terminal on or near the SDO's desk in the ready room. He is the squadron's central figure during flight ops aboard ship, and he will need to immediately edit the flight schedule as it goes through the day, making changes and entering the smooth records. The Schedules officer usually writes the schedule in the evenings, after flight ops have concluded. Officers aboard ship typically have adjusted to more cramped working conditions, and have moved their offices to the spaces under ready room chairs. Officers with computers will really see the benefit of the SIMS when they can have their own "electronic office" in their stateroom using a PDS.

If your squadron is fortunate enough to have a file server with one or more terminals,(nodes) we suggest you place them against one wall in the ready room if there is space. Cabling the network together will be easy with the file server and nodes so close together. Placing one node terminal in the Ops yeoman space, (if he has one near your ready room) would provide him with the peace and quiet needed to enter his data accurately, and let you watch the movies with the lights off.

The final arrangement of terminals and hardware is obviously up to you and your squadron. We only encourage you to give it some thought before you proceed to your deployment site. You do not want several computer boxes being moved about the ready room numerous times before you decide where they should go.

6.2.4 Transitioning Squadrons

As SIMS 1.00 goes to print, the single-seat jet community is in the process of transitioning from the A-7 Corsair II to the F/A-18 Hornet. A squadron in the midst of this transitioning process must keep accurate records of flight time and training in both sets of aircraft. It essentially becomes "two squadrons with one name" for a time.

Tracking this duality of information is, as one would imagine, twice as tedious and time-consuming as is the case with only one squadron aircraft. The SIMS can dramatically ease the information management burden in these situations.

We suggest that before a squadron begins its transition, it look closely at obtaining more storage hardware for its system. Solicit higher authority to request perhaps a 50-Megabyte hard drive or hard card. By the time this manual goes to print the prices will be significantly lower. If you can obtain a larger storage device, then you have eased your problem from the start. If you can't, you can still proceed. The system manager will just have to watch the storage limitation a little more closely.

Before you begin the transition, make a new directory on your hard disk. If you are unfamiliar with how to do this, consult your DOS manual. Once you have made the new directory, copy a complete F/A-18 version of the SIMS into it. You should now have two squadron SIMS, one in the A-7

directory and one in the neww F/A-18 directory. There are some things you must take care of before you begin to use the new SIMS.

Since you now have two different places to enter information, you must provide the user with the choice of which SIMS version he wants to use as soon as he turns on the machine. You can do this quite easily using your AUTOEXEC.BAT file, and an ASCII file name of your choice. The code required to make this work is found in Appendix A.4. Just copy the code onto your root directory and you will see how the computer presents the user with the choice of SIMS versions.

Also before you begin to fly the new aircraft, you should shift the database of the A-7 SIMS. The system manager should perform a major backup of the A-7 SIMS and then execute the WORM program. This program goes through several configurations and "eats" all the data, emptying the .DAT files. This procedure is potentially very damaging to existing data. Only the system manager should execute this. He should ensure the system has been properly backed up and copies made of the .DAT and .K files. The WORM program does not come with the SIMS disks. It is on a separate disk with other select files for the system manager only.

After he has shifted the database and run the WORM program, you will essentially have two empty SIMS on your computer, one for the old aircraft and one for the new. When you turn on the machine, you will have the choice to go to one or the other. You will be able to switch from one to the other by simply exiting from one, changing directories and then working in the other. (see the DOS manual if you have questions about how to do that)

Your squadron should of course go through the procedure of entering all the transition pilots in the F/A-18 flightcrew master file database.

Although you now have two different SIMS, you should not worry about the data filling up twice as fast. Your pilots will be flying the old aircraft half as much.

As your squadron completes the transition, you should have a fully functioning F/A-18 SIMS on one directory. Shift the A-7 database one more time, make sure you have copies of all the files you want, and then remove the A-7 SIMS directory. You will now have enough storage to run a fully functional F/A-18 squadron SIMS.

6.3 Peripheral Disk Sets

6.3.1 Introduction

The Peripheral Disk Sets (PDS) option was made available because of the current lack of sufficient terminals to properly automate squadron functions. We anticipate that several squadron officers may have to use their own personal computers to run the SIMS in the squadron. In preliminary design surveys, officers who were approached with this possibility had no hesitation whatsoever if it would help improve the antiquated information management system now in the fleet squadrons.

The PDS enable the individual officers to use their own personal computers to automate their area of responsibility, and gives them the ability to export that information to the main SIMS database.

Should an officer request a PDS from the system designers, he would receive a set of disks containing the same configurations that are presently on the SIMS for his billet. He would use the PDS on his own computer and then transfers the data files to the SIMS directory on the squadron's machine.

The PDS are designed to be used on two "floppy-disk" drives. This is not the optimum utilization of the code for either storage or speed, but will allow the officers to maintain their own data files on their personal computer.

Use of the PDS on a machine separate from the squadron computer or network requires that the individual officer purchase his own runtime facility. This software typically costs between $200.00 and $300.00, depending on the type of operating system in use on the individual computer. When the officer requests the PDS from the designers, this fee will cover only the cost of the DataFlex runtime facility and the cost of the disks. The configuration files are free for any tactical jet pilot.

6.4 Backup Strategies

The SIMS consists of a collection of databases. You add to this database each time you make a new entry in a configuration. As you accumulate data in your databases, you will want to ensure that data is saved on a medium other than just your hard disk. The policy you set concerning the frequency and method of backup efforts is called "backup strategy".

The squadron has options in choosing the method they use to backup their SIMS. The two presented here are manual backup systems and tape drive backup systems.

6.4.1 Manual Backup Systems

There are two ways to manually backup data. You can backup your entire collection of data at one time, or you can backup only those data files that have had something new entered into them since the last backup was made. The former is called a "major backup" and the latter is a "minor backup".

The only files you ever need to back up are the .DAT and .K files. The .FLX and .TAG files never change. Use these file extensions in the backup command syntax when you execute your backup procedures.

How often you need to backup your SIMS depends on several factors. How secure do you feel the power supply is at your present location? How much use does the SIMS get in the course of the day? The week? Are you coming up on a holiday period or a time of intensified operations? How many terminals are there attached to your SIMS?

The basic rule of thumb to use when deciding how long to go before backing up any computer data is this: Choose a time interval in which the amount of data entered would not be so large as to present difficulties if you had to re-enter that data. For example, let us say you have selected to wait for five days between each backup. Very early on the morning of the fifth day, some Boatswains come down and decide to play catch with your machine. They do not catch so well and drop it. Only five days worth of data are probably gone, because you have backed up the system to five days ago. Do you or your yeoman have the time to re-enter all the yellow sheets and flight schedules for five days worth of data?

We suggest you conduct a minor backup at the end of every operational day. It should take 10-15 minutes and

provide you with peace of mind and security of data. Once you make these minor backups to disks, copy your backup disks and store them in a place provided.

We suggest you conduct a major backup at the end of every week. Make this backup to the disks, copy those disks, and then store the sets in separate areas. The number of copies you make of this major backup effort will depend on how the authority in your squadron sets backup policy and views data security. If they are very concerned, three copies of these major backups could be made. Retain two in the squadron and send the third to the wing staff. If something should happen at your squadron location, you have a secure backup in an alternate area. You never know when an F-8 may crash into the hangar. If they are not too worried, you could simply make a copy of this backup effort and store it in a separate area. Once every six months or so you could send the whole database over to the wing for safe storage.

These sets contain all your operations data since the last database shift. When you do a major backup, ensure the dates are noted on the disks. For example, on the disk label, you would write, "Backed up through 4 September 1986" if the day you did the backup was the 4th of September. When you do a minor backup, also make sure that you note the date, such as "BACKUP FOR 4 SEPTEMBER/1900". It is probably a good idea to do the minor backups at the end of each day's flight ops. The SDO or the yeoman can easily learn how to do a backup.

When you receive your SIMS package, we suggest you gather some blank, formatted disks and set them aside as your "backup" disks. We are not referring to those disk you will use to make copies of the SIMS master disks. We refer to a number of standard Navy-issue disks your squadron obtains with the purpose of using them only for backups, minor and major. We suggest a disk arrangement below:

MAJOR BACKUP DISKS	COPY EACH MAJOR BACKUP DISK TO
MAJ BACK DISK 1	MAJ BACK DISK 1A
MAJ BACK DISK 2	MAJ BACK DISK 2A
MAJ BACK DISK 3	MAJ BACK DISK 3A
MAJ BACK DISK 4	MAJ BACK DISK 4A
MAJ BACK DISK 5	MAJ BACK DISK 5A
MAJ BACK DISK 6	MAJ BACK DISK 6A
MAJ BACK DISK 7	MAJ BACK DISK 7A

MINOR BACKUP DISKS	COPY EACH MINOR BACKUP DISK TO
MON BACK DISK	MON BACK DISK 2
TUE BACK DISK	TUE BACK DISK 2
WED BACK DISK	WED BACK DISK 2
THU BACK DISK	THU BACK DISK 2
FRI BACK DISK	FRI BACK DISK 2
SAT BACK DISK	SAT BACK DISK 2
SUN BACK DISK	SUN BACK DISK 2

These minor backup disks should only be used on their respective days, so that you will always know where to go should you need to re-enter the backed up information. We have included disk sets on which to copy these minor backups. That will probably not be necessary, unless your squadron feels like being extra cautious.

The set totals 28 disks. Label them all as described. On the disk jacket provide a place to note the date and time of each backup performed. Do not write on the disk label itself, as writing instruments damage the disk. This may seem like a lot of disks, but each only will contain only a small amount of information. Although it does require you obtain a number of disks, it more than makes up for that inconvenience by providing you with much needed organization of your backup file information.

We estimate that these are the maximum number you'll need. The amount and size of the files will determine how many backup disks used when the system is backed up. If you are just starting with the SIMS, or are starting after a database shift, the size of these files will be small. If you have not shifted the database for a long time, you will probably need 6 or 7 of the major backup disks.

These disks provide you with security of information you never had before. Today, if someone takes your yellow sheets or smooth flight schedules and throws them in the dumpster, you do not have copies. Now you can have those copies, and not worry about cruise boxes falling overboard on a loading evolution.

6.4.2 Tape Drive Backup Systems

Tape Drive backup systems are very convenient, simple, and efficient to use. They are separate pieces of hardware that attach to the hard disk on your computer, or they can be integrated into the hard disk itelf, with an external unit. This method allows you to back up your entire hard disk on one tape cassette cartridge. Some are more costly than others. Zenith offers this hardware for use with its Z-248.

If your squadron or wing decides to expend the funds to purchase a tape drive backup system. your backup policy will be greatly simplified. Follow the instructions that come with the tape drive system, and backup the SIMS as often as you wish.

This method also offers the ability to make major and minor backups. Develop your backup strategy with this in mind.

6.5 Optimizing the SIMS: Network Technology

6.5.1 Introduction

The SIMS was designed to be used on a network or a multi-user system. Until now, there has been no reason to install a network in a squadron. The need has existed for years, but there has never been a complete information management system specifically designed for squadron use available to run on the network. Without custom-tailored software, it was useless to install a network in a squadron. Now, the reason and the need come together with available software to make the installation of a networked information management system in the tactical single-seat community an attainable high-priority concern.

The SIMS is the first step in changing the way tactical squadrons handle their information. The manual manipulation and storage of squadron information must give way to more efficient, less time-consuming methods. This section suggests one possible network application among many that are available.

6.5.2 The Squadron Network

This section describes the optimum SIMS network/multi-user configuration.

COMPONENT	NO.	SPECIFIC HARDWARE
File Server	1	Z-248 Computer w/30MB hard card
Terminal Nodes	4	Any small CRT w/keyboard (PC emulation type)
Printer	1	Currently in squadrons (or as desired)

Network Software | and | Network Interface Cards	1 5	Any competitive network software Compatible NIC for network
or		
XENIX Operating system		PC AT/XENIX
Network Cabling	As Req	Cabling compatible w/network software/XENIX system
DataFlex Runtime	1	DataFlex Runtime Facility Facility for the Network Software
SIMS Package	1	Tailored Squadron Information Management System Software

We suggest you place the file server and terminals as follows.

ASHORE

Place the Z-248 (the file server) in a central location in the Operations department. This may be near the Ops yeoman's desk, or it may be in the Operations officer's office. Arrange the Z-248 and its networked terminals in the most convenient locations to facilitate your Ops department routine. Cable the terminals together in accordance with the instructions that come with the network. Install the network software and the SIMS package on the hard disk, activate the file server, and you should be up and running.

A good rule of them is to place a terminal in the same places where you now have phones. If you have a phone on the SDO desk, in the main Operations room, in the Operations officer's office, and a side office, you should place your terminals in those same locations. You should also think about placing a terminal in the briefing room. Additions to the SIMS can include the squadron briefing guides, flight planning programs, and intelligence information of an unclassified nature.

In addition to installing a networked information management system in the squadron, later hardware procurements could allow the Wing staff to network to each squadron, thereby eliminating the need for the squadron to output any operations reports to the wing. The Wing would have the information accessible to the network.

6.6 Sharing the Data: SIMS Exchange

Another interesting possibility the SIMS presents is the ability to take selected data files from one squadron's database and send them to another squadron's SIMS.

Let's say that a squadron is coming to the end of its deployment. The tactical lessons learned entered in the WTO configurations could be transported to squadrons preparing to go on deployment, giving them ideas and experience gained by their predecessors.

Squadrons could share Tactical Publication files, with information on who to contact in the squadron for the specific information.

Experienced squadron Operations officers could share Training plans with newer Operations officers, or share those Training plans that have occured in the same time frame to give each other an idea of a broad range of available training opportunities.

There are many other possible exchanges of information. All that is required is for the system manager to copy his own squadron's appropriate configuration .DAT file to a safe place, copy in the .DAT file received from another squadron, run the configuration to look at the other data, and either print it out or copy in his original .DAT file over it to restore his own squadron's SIMS to original condition.

APPENDIX A.1 - TACTICAL MISSION PLANNING FOR THE A-7E

TACTICAL COMPUTER AIDED MISSION PLANNING SYSTEM

USER MANUAL

WHAT IS COMPUTER AIDED TACTICAL PLANNING?

INTRODUCTION

This program was designed to assist pilots with tactical mission planning in three ways:

1. Compute aircraft performance parameters for all phases of the mission, both high and low altitude. This includes display of the maximum range profile and the maximum range performance for a selected altitude, and allows a side by side comparison of maximum range mission requirements.

2. Provide the ability to enter, edit, and store on disk, many different low level routes, each defined by up to a maximum of nine (9) lat/long navigation points. These routes may later be recalled for performance computations. Routes of more than nine points can be planned in one of two ways:

    A. Make two separate runs of the entire program.

    B. Following jet log completion, select the option to calculate another route, then enter the route and continue with the program. Low level performance will be computed using previously input aircraft performance parameters and computed performance.

3. Combine the low level performance computations with lat/long route data, and automatically prepare a completed jet log for the low level route. The program supplants the time-consuming requirement to trace through NATOPS charts to obtain aircraft performance data, compute aircraft performance and mission requirements, measure low-level route navigation data, and finally compute a jet log.

USES FOR COMPUTER AIDED TACTICAL PLANNING

The primary uses for a computer based mission planning system are to save time and allow a range of tactical options for consideration that would not be possible with manual calculation. Additionally, computed aircraft performance data must be at least as accurate as data obtained from the NATOPS charts, offering these tactical options with complete and consistent accuracy. Accurate fuel management, beginning at the mission planning phase, results in more training per flight hour and more tactical options available per mission than is presently available with manual calculations. With this program, planners could build a file of low level routes to a target. Current intelligence information could be collected and utilized much longer, with tactical decisions regarding route, altitudes, and target selection made much later and closer to actual launch times. These tactical decisions could be based upon weather considerations, target options, information regarding enemy defenses, or political considerations. Additionally, accurate launch position information could be used to compute more accurate mission fuel requirements. For the training environment, use of this program can provide significantly better fuel management, reduced costs per flight hour, and thus more effective training per flight hour. Tradeoff studies in mission requirements, based on altitude, speed, fuel required, and time, may also be easily conducted.

SYSTEM REQUIREMENTS

These are the system requirements you will need to run the mission planning program; these are NOT the system requirements for the SIMS package. You can run this program from the SIMS menu, or run it from your two-drive system. If you plan to run it from your two-drive system, you will need these following requirements:

1. An IBM PC, PCXT, PCAT, Portable or any true compatible.
2. 256K RAM.
3. A double density disk drive or a hard disk drive.
4. Any 80 column display, color or monochrome.
5. DOS 2.0 or higher.

WARNING: Always run this program with no other memory resident software installed. The only exception to this is running the program from a RAMDISK. The RAMDISK must be created BEFORE copying this program to the disk and running this program.

RUNNING THE PROGRAM FROM A RAMDISK

1. System RAM of 640K total is required.
2. Create the ramdisk of size at least 360K.
3. Copy the program disk to the ramdisk using the *.* method.
4. On the ramdrive prompt C> type the batch filename to start the program, RAMPLAN.
5. Be sure to file route data using B:filename

HOW DOES THE PROGRAM WORK?

There are four (4) sections to the complete program.

1. The MAXIMUM RANGE COMPUTER section.
2. The TAKEOFF and HIGH ALTITUDE CRUISE section.
3. The LOW LEVEL CRUISE AND JET LOG section.
4. The LAT/LONG COORDINATE EDITOR section.

MAXIMUM RANGE COMPUTER SECTION

This section requires 6 inputs, and is a stand alone program. This means that the program is run completely separate from the other programs, and results from this program are not automatically transfered to any other program. In contrast, all the remaining sections are interconnected.
Following the data inputs, aircraft maximum range performance is computed at the altitude for maximum range, and at an alternate altitude which the user specifies. Mission time, fuel, and speeds are computed for a mission distance the user specifies. Results can be compared side by side. Maximum endurance performance is also presented. This information can be used to select actual mission altitudes, and input to the other sections.

TAKEOFF AND HIGH ALTITUDE CRUISE SECTION

This section requires 11 inputs regarding aircraft and desired operational parameters. Aircraft performance is then computed and displayed. The program is designed to output this performance in a form most easily utilized by pilots. There is no attempt made to "micro-manage" the planning process by completely computerizing the entire navigation route. The program is intended to be tactically utilized, to be useful in any environment which may precede the low level ingress route. Carrier based Navy and Marine Corps aircraft often launch and complete a rather lengthy procedure of rendezvous, tanking, and tactical formation. Much of the high altitude navigation route may be open ocean, thereby negating the usefulness of any high altitude route planner. A feature such as this would complicate the user interaction and result in a less useful program.
Following the data inputs, aircraft performance is computed for the TAKEOFF, CLIMB, CRUISE, and DESCENT mission phases.

LOW LEVEL CRUISE AND JET LOG SECTION

This section embraces three (3) low level operational features.

1. Lat/long coordinate editor.
2. High or Low level performance computations.
3. Completed jet log.

The user may choose to enter lat/long data manually or from a file. With manual entry, latitude and longitude are entered, along with magnetic variation at each navigation point. The route may then be filed. The user may choose to build another route, or continue with performance calculations for the route just entered. Computed high or low level performance is combined with the navigation route information, high or low level, to produce a completed jet log.

LAT/LONG COORDINATE EDITOR

This section, while included in the LOW LEVEL CRUISE AND JET LOG section, may also be selected independently from the low level planning section. Performance computations are not made here, however, distance and heading information are presented for each route computed. This section is primarily used to build a file of high or low level routes. Since ANY navigation route can be constructed and filed, this section is well suited to aid the planner in the navigation computations required for the high altitude routes.

GETTING STARTED

This section will describe how to start the program on either an IBM PC/XT/AT or a true compatible such as a COMPAQ, AT&T PC 6300, or ZENITH 150 or 248. Each data input/output screen will be discussed and explained. Pay particular attention to the NOTES and WARNINGS which will attempt to prevent the user from becoming frustrated with the program.

STARTING THE PROGRAM

Insert the program disk into drive A:, close the drive door, turn on the monitor, and then the computer power switch. Highlight the type of machine you are using from the menu using the arrow direction keys on the numeric keypad, followed by hitting the ENTER key to make the selection. Then highlight which group of programs you want to run, either the Maximum Range Computer or the Mission Planning programs, followed by hitting the ENTER key to make the selection.

INTRODUCTION TO THE MAXIMUM RANGE COMPUTER

There is no introductory screen for this section. The first screen displayed will ask for data entry. The second screen displayed will contain all of the results of the computations.

WHAT YOU NEED TO GET STARTED PLANNING

The following information will be asked for in the data input screen, and therefore should be available initially upon starting the program.

* Gross Weight At Takeoff
* Drag count for Mach Number 0.6
* Desired Altitude for comparison to the optimum altitude for maximum range.
* A Cruise Leg Distance
* Takeoff Temperature in Degrees Fahrenheit
* Cruise Headwind or Tailwind

DATA OUTPUT SCREEN

There is only one Data Output Screen containing the following information based on the input data:

Screen #1 - Computed Performance at the optimum altitude for maximum range:
  * Optimum Cruise Altitude
  * Max Range Mach Number
  * Specific Range in lb/nm
  * Cruise Leg Time
  * Cruise Leg Fuel
  * True Airspeed and Ground Speed

- Computed Performance for maximum range possible at the desired altitude:
    * Optimum Cruise Altitude
    * Max Range Mach Number
    * Specific Range in lb/nm
    * Cruise Leg Time
    * Cruise Leg Fuel
    * True Airspeed and Ground Speed

- Computed performance at the altitude for maximum endurance:
    * Optimum Endurance Altitude
    * Optimum Endurance Mach Number
    * Optimum Endurance Fuel Flow in lb/hr

  NOTE: These optimum endurance numbers are computed for a relatively heavy gross weight. The computed performance is therefore tactically useful in determining the optimum rendezvous and join up altitude.

INTRODUCTION

This is a series of screens to explain how the program is structured. For new users, read the introduction, and select option 1: "output to the screen only", at the end of the introduction. Experienced users should select option 2 or option 3.

WHAT YOU NEED TO GET STARTED PLANNING

The following information will be asked for in the first data input screen, and therefore should be available initially upon starting the program.

* Runway Takeoff Temperature in Degrees Fahrenheit.
* Runway Pressure Altitude
* Takeoff Gross Weight
* Runway Length
* Drag Count at Mach Numbers 0.6, 0.7, 0.8, 0.9.
* Desired Cruise Mach Number
* Desired Cruise Altitude
* Headwind or Tailwind
* Altitude at Start of Descent in MSL
* Altitude at End of Descent in MSL
* Takeoff Fuel Load

DATA INPUT SCREEN

Enter the above data for your flight by typing in a value, then pressing the ENTER key, repeating this for all the values. Default values are displayed, and you may select these by simply putting the cursor on the value, and pressing the ENTER key. Drag count data may be found in NATOPS section 11, or in Appendix A of this user guide. To use Appendix A, compute the drag count for mach number 0.6 only from the NATOPS tables. Then proceed to Appendix A and simply read the drag count for the mach numbers 0.7 through 0.9. Input these drag counts to the Data Input Screen.

DATA OUTPUT SCREENS

There are five (5) Data Output Screens containing the following information based on the input data:

Screen #1 - Takeoff Configuration of the aircraft.

Screen #2 - Computed Takeoff Performance with and without double datum:
* Ground Roll Distance
* Takeoff Speed
* Refusal Speed

Screen #3 - Computed Climb Data using the NATOPS maximum range profile approximations:
* Climb Speed
* Climb Mach
* Climb Time
* Climb Fuel Required
* Distance Covered in Climb

Screen #4 - Computed Cruise Data for the input parameters:
* Ambient Temperature
* Fuel Flow
* Specific Range in lb/nm
* Ground Speed
* True Air Speed

Screen #5 - Computed Descent data for the input parameters and for a minimum fuel profile:
* Descent Fuel Used
* Distance Covered
* Descent Time
* Descent Speed

MISSION PLANNING OPTIONS

Select one of the three options:

- LOW LEVEL ROUTE PLANNER -
  * Manually enter a route, edit the route, file the route, compute performance and a jet log for the route.
  * Load a route from a file, and compute performance and a jet log for the route. NOTE: CAN NOT EDIT ROUTES LOADED FROM A FILE.

- ENTER ONLY LAT/LONG DATA -
  * Manually enter, edit, and file a route.
  * May repeat this procedure for multiple route entry and filing.
  * Distance and Heading information is presented.
  * NOTE: NO AIRCRAFT PERFORMANCE OR JET LOG IS COMPUTED.

- EXIT TO DOS -
  * NOTE: BE SURE TO SAVE THE ROUTE BY FILING IT BEFORE YOU EXIT THE PROGRAM!

LOW LEVEL ROUTE PLANNER

This section will be discussed here in more detail, and will include discussions of the other options in this section.

Screen #1 - Low Level Data Input Form:
  * Type in a value, followed by pressing the ENTER key. Three values are requested.

    1. Low Level Altitude in MSL
    2. Low Level Speed (Kts. Ground Speed)
    3. Beginning Fuel State for the Route

  * WARNING: BE SURE TO ENTER LOW LEVEL ALTITUDE AS MSL!
  * NOTE: The Low Level Altitude may be as high as 45000 feet MSL. Therefore, typical cruise altitudes may be entered. When combined with a high altitude navigation route entered in the next section, a cruise leg jet log may be produced. Simply run the Mission Planning program again

to compute the low level route portion.

Screen #2 - This shows the format for lat/long data entry as DEG.MIN.SEC and requests the following:
* North or South Latitude (N or S)
* East or West Longitude (E or W)
* East or West Magnetic Variation (E or W)
* Number of points to enter (2 to 9)

Screen #3 - Lat/Long data input uses the following sequence:
* Type the value of the latitude DEGrees, then press the ENTER key.
* Type the value of the latitude MINutes, then press the ENTER key.
* Type the value of the latitude SEConds, then press the ENTER key.
* Repeat this sequence for the longitude values.
* Type the value of the magnetic variation as simply a number. NO PLUS OR MINUS SIGNS. NO EAST (E) or WEST (W).

- EDITING DATA BEFORE PRESSING THE {ENTER} KEY:
  * Position the cursor over the incorrect value, type the correct value, press the ENTER key.

- EDITING DATA AFTER PRESSING THE {ENTER} KEY:
  * Continue entering the remaining points. Following this, you will be given the opportunity to edit any incorrect points.

- FILING DATA -
  * Respond to program requests.
  * WARNING: Provide only filenames of 8 characters or less. DO NOT TYPE ANY EXTENSIONS (example: .DAT) WITH ANY FILENAMES.
  * See the following Note To Experienced Users for more filing details.

NOTE TO EXPERIENCED USERS

Data is filed according to the fully qualified filename definition, however, in NO CASE SHOULD A USER SPECIFY A FILENAME THAT INCLUDES AN EXTENSION. Data may be filed on the B: drive to a separate data disk. Route files are very small, approximately 1K in size, and there is approximately 20K of disk space available on the program disk which can store about 20 route files. The user may desire to store classified or otherwise sensitive routes on a separate data disk in the B: drive, which then may be afforded the appropriate degree of security, or to store all route files on a spearate data disk. To accomplish this, simply respond to the requests for filenames with a more complete filename. For an example, the user would type B:IR203 in response to the requests, instead of simply IR203. To erase files from the program disk, use the DOS command { ERASE filename.* } and substitute the actual name of the route for the filename.

Screen #4 - Output screen of computed navigation data.

Screen #5 - Computed low level aircraft performance data.

Screen #6 - Completed low level jet log.

FINAL OPTIONS

To compute a return profile, the program will begin at the beginning, with the data input form. All values must be entered, even though there is no takeoff to be made. The user must tolerate the takeoff computations and display, in order to obtain accurate return profile performance. This method actually allows re-entry of important aircraft configuration, weight, drag, and fuel information that most certainly has changed from the ingress parameters. The result is very accurate return profile performance data.
Calculation of another route will use the input data already provided and performance data already computed in completing the navigation data and jet log.

ERRORS

Most errors will be intercepted, allowing the user to repeat some action correctly and continue with the program. Two most common errors may occur:
1. Responding to a request for a letter by typing a number. In this case, the number will be accepted, however, the program will probably fail shortly thereafter. In this case, start the program again by pressing the CTRL-ALT-DEL keys simultaneously.
2. Responding to a request for a number by typing a letter. In this case, the user will see the following message on the monitor screen:

?Redo from start

Although this looks bad, there is an easy solution. Simply type the correct response, press the ENTER key, and continue with the program. If the screen display and cursor location do not line up for proper data entry, or the program isn't running correctly, then press the CTRL-ALT-DEL keys simultaneously to start the program over from the beginning.

QUICK START REFERENCE INSTRUCTIONS

Many people would like to start using a program without reading the instructions, or bothering with the details of program operation. This quick reference guide has been prepared for this purpose.

LOADING AND STARTING THE PROGRAM

Insert the program disk into drive A:, close the drive door, turn on the monitor, and then the computer power switch. Highlight the type of machine you are using from the menu using the arrow direction keys on the numeric keypad, followed by hitting the ENTER key to make the selection. Highlight the MAX RANGE COMPUTER, followed by hitting the ENTER key to make the selction. Follow the on screen instructions. After returning to the main program selection menu, highlight the MISSION PLANNING option followed by hitting the Enter key to make the selection. Then hit the ENTER key again to select the "READ A SHORT INTRO TO THE PROGRAM" option from the mission planning menu. Follow the on-screen instructions carefully. Proceed slowly and patiently the first time through, taking time to read each screen fully, and to read the associated help screens that appear as different options are highlighted with the arrow direction keys on the numeric keypad to the right of the keyboard. Decide on an option, highlight the option, then hit the ENTER key to make the selection.

DATA ENTRY FORMS

Type in the correct value asked for in a block, followed by pressing the ENTER key. Some blocks, when they are filled, will automatically enter the value and place the cursor at the next block, waiting for data to be entered. If this occurs, simply continue entering the data for the block containing the cursor, and go on with the program. This is designed to save time. Repeat for all the blocks.

LAT/LONG DATA ENTRY

Type in a value for the DEGrees, then press the ENTER key.
Type in a value for the MINutes, then press the ENTER key.
Type in a value for the SEConds, then press the ENTER key.
Type in a value for the MAGnetic VARiation, then press the ENTER key.

Repeat for all the data points.

EDITING

- EDITING DATA BEFORE PRESSING THE {ENTER} KEY:
  * Position the cursor over the incorrect value, type the correct value, press the ENTER key.
- EDITING DATA AFTER PRESSING THE {ENTER} KEY:
  * Continue entering the remaining points. Following this, you will be given the opportunity to edit any incorrect points.
- FILING DATA -
  * Respond to program requests.
  * WARNING: Provide only filenames of 8 characters or less. DO NOT TYPE ANY EXTENSIONS (example:.DAT) WITH ANY FILENAMES.

FINAL OPTIONS

To compute a return profile, the program will begin at the beginning, with the data input form. All entries must be made, even though there is no takeoff to be made. The user must tolerate the takeoff computations and display, in order to obtain accurate return profile performance. This method actually allows re-entry of important aircraft configuration, weight, drag, and fuel information that most certainly has changed from the ingress parameters. The result is very accurate return profile performance data.

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